

Color Management Equipment and Solutions

COLOR MANAGEMENT

SPECTROPHOTOMETER
SPECTRODENSITOMETER
COLOR MATCHING SOFTWARE
COLORIMETER COLOR READER
COLOR LIGHT BOX
DIGITAL GLOSS METER
COLOR HAZE METER
RESOLUTION TEST CHART
CAMERA TEST LIGHT BOX

3nh[®] TILO[®] 
3nh Global

GUANGDONG THREENH TECHNOLOGY CO., LTD.

ABOUT US

Guangdong Threenh Technology Co., Ltd. is a high-tech enterprise specializing in the research and development, production, sales, and service of products in the field of photoelectric detection technology and color management. After years of research and innovation, we have developed and launched TS85/YS60 benchtop spectrophotometers, TS7x/ST/YS30/NS series spectrophotometers, NH/NR series colorimeters, NHG intelligent gloss meters, HG/YG automatic calibration gloss meters, color haze meters, thickness gauges, ISO 12233 resolution test charts, optical image test solutions, and standard color light boxes. These instruments are widely used in plastics, electronics, paints, inks, textiles, garments, printing and dyeing, food, medical, cosmetics, optical image testing, as well as in scientific research, education, and laboratory applications. Our products are exported worldwide and we provide customized services that have been well received by customers.



CERTIFICATES&HONOR

- Certified as a Chinese National High-Tech Enterprise
- Certified by CE, RoHS, FCC, and TUV
- ISO 9001 Quality Management System Certified
- Philips Authorized Agent In China



EXHIBITION

3nh actively participates in international exhibitions, showcasing core products such as colorimeters, gloss meters, and color-matching software. Our booths attract global visitors who come to consult and explore cooperation opportunities, and our product quality and services have earned long-term recognition worldwide.



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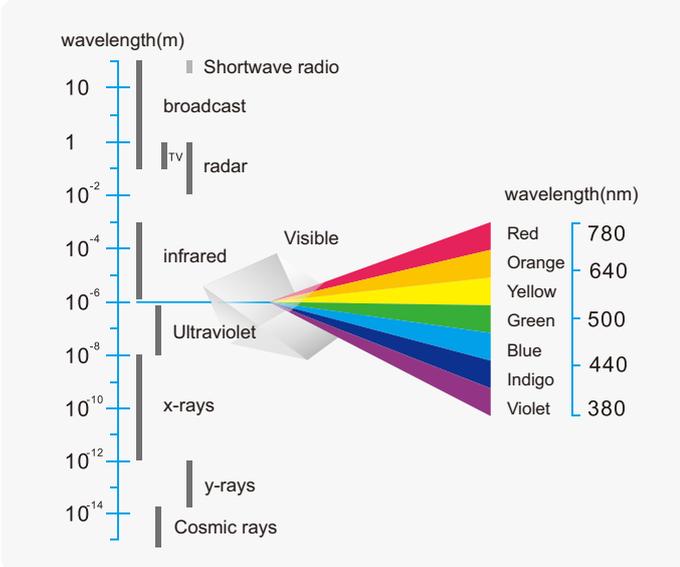
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THE BASIC THEORY OF COLOR

1. Principles of Human Color Perception

From a scientific point of view, electromagnetic waves are a form of energy. All objects above absolute zero emit electromagnetic radiation. The higher the temperature, the shorter the wavelength. Electromagnetic waves are everywhere in our lives, but most are invisible to the naked eye. Visible light represents only a small portion of the electromagnetic spectrum, yet it enables human vision.



The human eye perceives color because certain wavelengths stimulate the retina. Within the visible range (approximately 380–780 nm), red has the longest wavelength while violet has the shortest. The visible spectrum includes red, orange, yellow, green, blue, indigo, and violet. Beyond this range lie infrared and ultraviolet radiation, as well as radio waves, x-rays, and gamma rays.

Light reflected from an object determines the color we see. In reality, most colors are mixtures of different wavelengths within the visible region, except in the case of synthetic monochromatic light sources.

3. Accurate Methods of Color Expression

Many researchers have developed methods to accurately express color. These methods aim to make the exchange of color information easier and more precise, much like using numbers to represent length or weight.

In 1905, American painter A.H. Munsell introduced a systematic way to express colors. His system describes color using three attributes: hue (Munsell hue), lightness (Munsell value), and saturation (Munsell chroma). This allowed large collections of color samples to be compared and communicated more effectively.

Two of the most important modern color systems are the CIE 1931 Yxy system and the CIE 1976 L*a*b* system. The Yxy system is based on the CIE standard observer and tristimulus theory, while the L*a*b* system was developed in 1976 to provide a more uniform color space that better represents perceived color differences. Both systems are widely used in modern color science and color communication.

2. Elements of Color

The three fundamental elements of color are Hue, Lightness, and Saturation. All visible colors are the combined effect of these three attributes. Hue is closely related to wavelength, Lightness to luminance level, and Saturation to the purity of the color.

Hue Different Colors

Hue refers to the appearance of color determined by the wavelength of light reflected from or transmitted through an object. It is the attribute used to classify colors such as red, yellow, blue, and green.

Lightness Bright Colors, Dark Colors

Lightness describes the relative brightness of a color, ranging from dark to light. It is generally expressed as a percentage scale from 0% (black) to 100% (white).

Saturation Color Purity

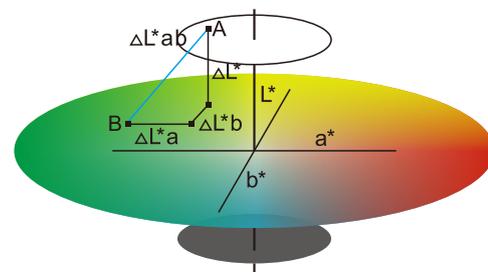
Saturation, sometimes referred to as chroma, represents the intensity or purity of a color. It indicates the degree to which a color differs from gray of the same lightness, measured from 0% (gray) to 100% (fully saturated).

4. Common Color Difference Formula

In the CIE L*a*b* color space, color differences can be expressed as a single numerical value, which represents the magnitude of the difference between two colors. However, this value does not indicate the direction of the difference (i.e., in which way the colors differ).

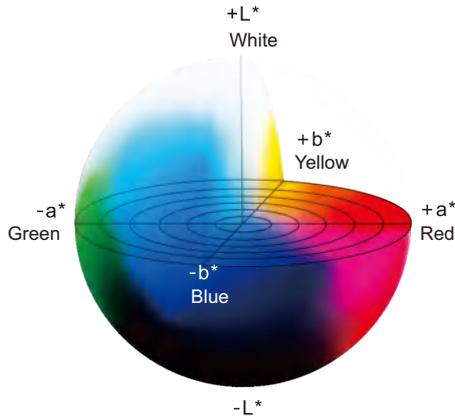
The color difference ΔE^*_{ab} is defined by the following formula:

$$\Delta E^*_{ab} = [(\Delta L^*)^2 + (\Delta a^*)^2 + (\Delta b^*)^2]^{\frac{1}{2}}$$



A: Target color B: Sample color

5. Color Values: ΔE , CIE LCH, CIELAB



CIE LAB

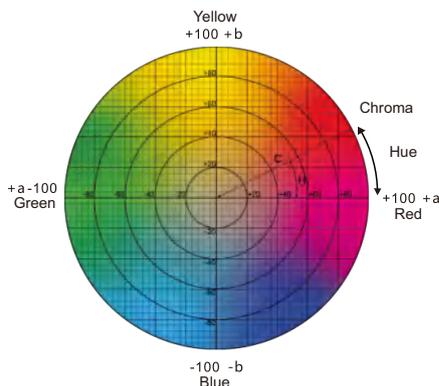
CIE $L^*a^*b^*$ is a color space defined by the International Commission on Illumination (CIE). It is based on the concept that a color cannot be both red and green, or both blue and yellow, at the same time. In the CIE $L^*a^*b^*$ model, L^* represents lightness, a^* represents the red–green axis, and b^* represents the yellow–blue axis. With these three values, any color can be expressed numerically.

CIE LCH

CIE L^*C^*h is a color space derived from CIE $L^*a^*b^*$. It uses cylindrical coordinates in which L^* represents lightness, C^* represents chroma (saturation), and h° represents the hue angle. This form of expression is often considered more intuitive, as it directly relates to brightness, saturation, and hue.

The total size of the color difference ΔE

$\Delta L^* > 0$ indicates a lighter color and $\Delta L^* < 0$ indicates a darker color. $\Delta a^* > 0$ indicates a shift toward red and $\Delta a^* < 0$ indicates a shift toward green. $\Delta b^* > 0$ indicates a shift toward yellow and $\Delta b^* < 0$ indicates a shift toward blue. The ΔE^*ab value represents the total magnitude of the color difference between two samples.



Color difference ΔE^*ab	Meaning
0 - 0.5 ΔE	A normal invisible difference
0.5 - 1.0 ΔE	Very small difference, only obvious to a trained eye
1.0 - 2.0 ΔE	Medium difference, also obvious to an untrained eye
2.0 - 4.0 ΔE	An obvious difference
4.0 ΔE	A very obvious difference

6. Temperature Will Affect Colors

Sometimes, when the temperature changes, the color of a material will also change. This phenomenon is called thermochromism. To obtain more accurate colorimeter measurements, it is recommended to carry out testing in a controlled temperature environment and to measure the sample only after it has reached room temperature equilibrium. The BCRA standard color board demonstrates the following changes in color difference (ΔE^*ab) when the room temperature varies by 10°C.

Colour	(ΔE^*ab)	Colour	(ΔE^*ab)
White	0.01	Red	1.32
Light Gray	0.02	Yellow	0.92
Medium Gray	0.05	Green	0.92
Dark Gray	0.05	Dark Green	0.91
Deep Gray	0.05	Green	0.46
Deep Pink	0.60	Deep Blue	0.17
Orange	1.52	Black	0.02

7. The Relationship Between Color and Glossiness (SCI & SCE)

SCI and SCE are two methods used in color measurement. SCI stands for Specular Component Included, while SCE stands for Specular Component Excluded. Under the SCE method, only the diffuse reflection is measured, while the specular reflection is excluded. In this way, the test result is closer to how the human eye perceives the color of an object. Under the SCI method, both diffuse reflection and specular reflection are included, which makes the measured color value more objective and consistent. The SCI measurement is less affected by environmental conditions such as gloss. When selecting an instrument, it is important to take into account whether SCI or SCE measurement is required.

8. Example of Quality Control with a Colorimeter

Company A manufactures exterior plastic parts ordered by Company B. Company B also sources similar parts from other suppliers. At Company A, an experienced inspector is responsible for color control on the production line, visually evaluating products by comparing them with standard color samples. Visual inspection relies heavily on the skill and experience of inspectors to determine whether a product is qualified. This work cannot be performed by just anyone; it requires years of training to develop the ability for accurate visual judgment. As a result, the number of people capable of such inspection is limited. In addition, the process can only be performed for a restricted period each day or week, and the accuracy may vary depending on the inspector's age and physical condition.

Sometimes, Company B complained that the color of parts from Company A did not match those supplied by other vendors, and returned the parts to Company A. To address this issue, Company A decided to use a colorimeter for quality control. A colorimeter is widely adopted in production due to its handheld design, fast measurement speed, and ease of use. Unlike visual inspection, it can be applied consistently at any stage of the production line. Furthermore, it is user-friendly, allows anyone to operate it with minimal training, and provides printed test results as objective proof of a company's color quality control.

FOCUSING ON THE OVERALL COLOR SOLUTION

A spectrophotometer + PeColor, Make color matching so easy!



3nh's carefully developed PeColor Color matching software, a job-oriented color conditioning software for paint, plastic, paint, ink and textile color matching solutions, provides fast and accurate color analysis and formulation for a variety of applications. PeColor has the characteristics of simple operation and easy to learn, accurate color matching and strong correction ability. It can be used not only for color matching in laboratory, but also for quality control and color difference correction in workshop production.

This software is applicable to Win7/Win8/Win10/Mac/Linux Unix systems and supports Chinese and English language translation.

- | | | | |
|--|--|---|---|
|  Color matching management |  Color detection |  Color management |  Paint management |
| 1 Quick installation and simple configuration | 2 The system is stable and efficient | 3 Rich content and powerful functions | 4 Friendly interface, simple and easy to use |

ONE-CLICK COLOR MATCHING

Expert formula system to ensure that the formula meets the requirements

Newbies become masters in no time, with 2 days of training and 3 days of practice — just 5 days away from mastering the skill.

Quick one-click color matching with multiple options available, completing 30 days' worth of work in just 1 hour.

Intelligent formula correction, automatic calculation of corrected formulas, and smart integration with third-party systems and devices.

High color-matching efficiency with the software, significantly saving on labor, materials, and time costs.



Function

▶ PeColor can be paired with an automatic color mixer for automatic weighing

Automatic toner weighing, faster than manual, and can avoid personnel weighing errors (note: the toner is only suitable for the measurement of liquid components, such as ink, paint, etc.).

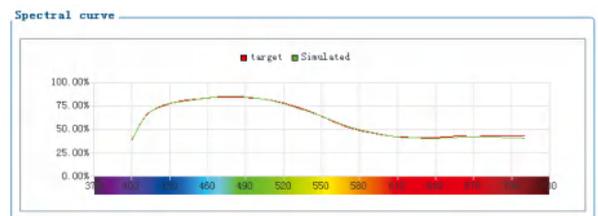


▶ A variety of formulas are available

In contrast to traditional manual color matching, PeColor can calculate multiple formulations for users to choose from.

▶ Meet the color requirements of multiple light sources

Through the spectral curve chart, isochromatic spectrum (MI) index, you can more clearly help color matching personnel analyze pigment characteristics, find the right pigment formula, to meet the needs of multi-light source color.



▶ It can be amended again to eliminate waste in production

PeColor can correct the color defective products again to eliminate the waste caused by the color defective products.

▶ Implement color detection

In addition to color matching, PeColor also serves as a quality management tool-color detection. Easily complete online color detection.

	Name	White	Pigment	Black	Concentration%	ShowSpectrum
1	8	0	99.9	0.1	99.9	<input checked="" type="checkbox"/>
2	7	50	50	0	50	<input checked="" type="checkbox"/>
3	6	70	30	0	30	<input checked="" type="checkbox"/>
4	5	80	20	0	20	<input checked="" type="checkbox"/>
5	4	94	6	0	6	<input checked="" type="checkbox"/>
6	3	98	2	0	2	<input checked="" type="checkbox"/>
7	2	99.5	0.5	0	0.5	<input checked="" type="checkbox"/>
8	1	99.9	0.1	0	0.1	<input checked="" type="checkbox"/>

PREPARATION BEFORE COLOR MATCHING

The color matching system requires the following tools. PeColor supports a variety of 3nh color measurement instruments. See the previous page for details.

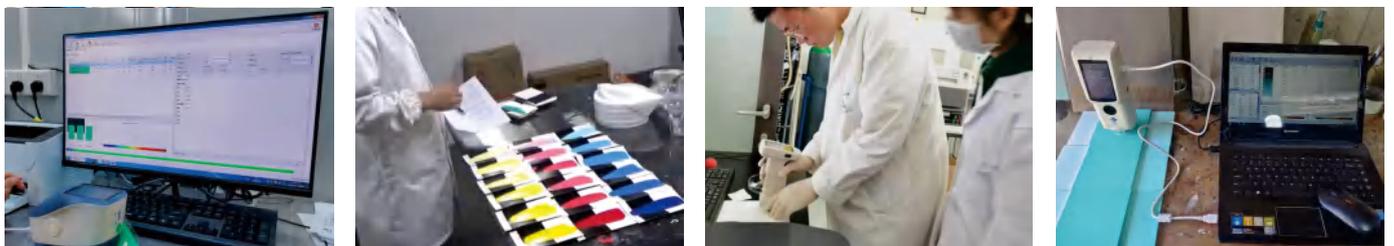
 <p>Spectrophotometer</p> <ul style="list-style-type: none"> • Measure color • Transfer data • Quality control 	 <p>Color matching software</p> <ul style="list-style-type: none"> • Formula calculation • Quality control • Formulation modification 	 <p>Office computer</p> <ul style="list-style-type: none"> • Software operation • Data transfer • Control machine 	 <p>Automatic color mixer</p> <ul style="list-style-type: none"> • Automatic ink weighing • Automatic mixing ink 	 <p>Sample gradient plate</p> <ul style="list-style-type: none"> • Make a color matching database
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SUITABLE FOR MULTI-TYPE SPECTROPHOTOMETER

The combination of spectrophotometer and color matching software (PeColor); Easy color matching. At present, the color difference meter models that Sanen can support are : TS7700 series, ST-700d series, MS3012 series, PS2040 series, TS7010 series, TS8500 series, YS6060 series, YS4560 series, YS3060 series, CR color difference treasure series.

Color matching software	Adaptive model	Picture	Adaptive model	Picture
 <p>PeColor + Spectrophotometer = Colorist!</p>	TS7700 series		TS8500 series	
	TS-700D series		YS6060 series	
	PS2040 series		YS4560 series	
	TS7010 series		YS3060 series	
	MS3012 series		Colorimeter CR series	

3nh color matching software has accurate color matching effects, which greatly reduces labor costs and improves production efficiency. Through the application of a large number of customers in the industry, successfully assist them to solve the problem of difficult color matching; Make customers very satisfied with our 3nh products.



APPLIED RANGE

► Plastic industry color matching

PeColor is suitable for the color matching of plastic material modification industries, such as home appliances, automobiles, plastic toys, etc. It is also suitable for color matching in the masterbatch industry, such as commonly used masterbatch blow bottles, cosmetic hoses and other products.



► Paint industry color matching

PeColor is suitable for furniture paint, latex paint, printing and other paint industry color matching, whether oil paint or environmental protection water paint.

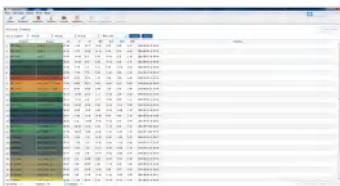


► Sewing agent industry color matching

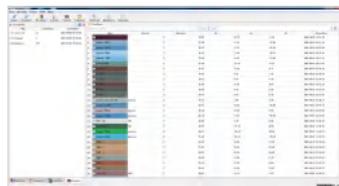
With the improvement of people's quality of life, the gap between the tiles also needs to be colored, and accurate color matching can also be achieved in the sealant industry.



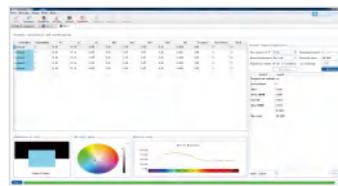
PECOLOR COLOR MATCHING INTERFACE



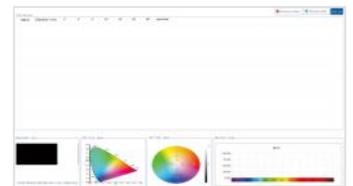
Color management: color storage and management (color library building, color building, color detection, etc.)



Color management: color library establishment and management (razor table establishment, color library calculation, etc.)

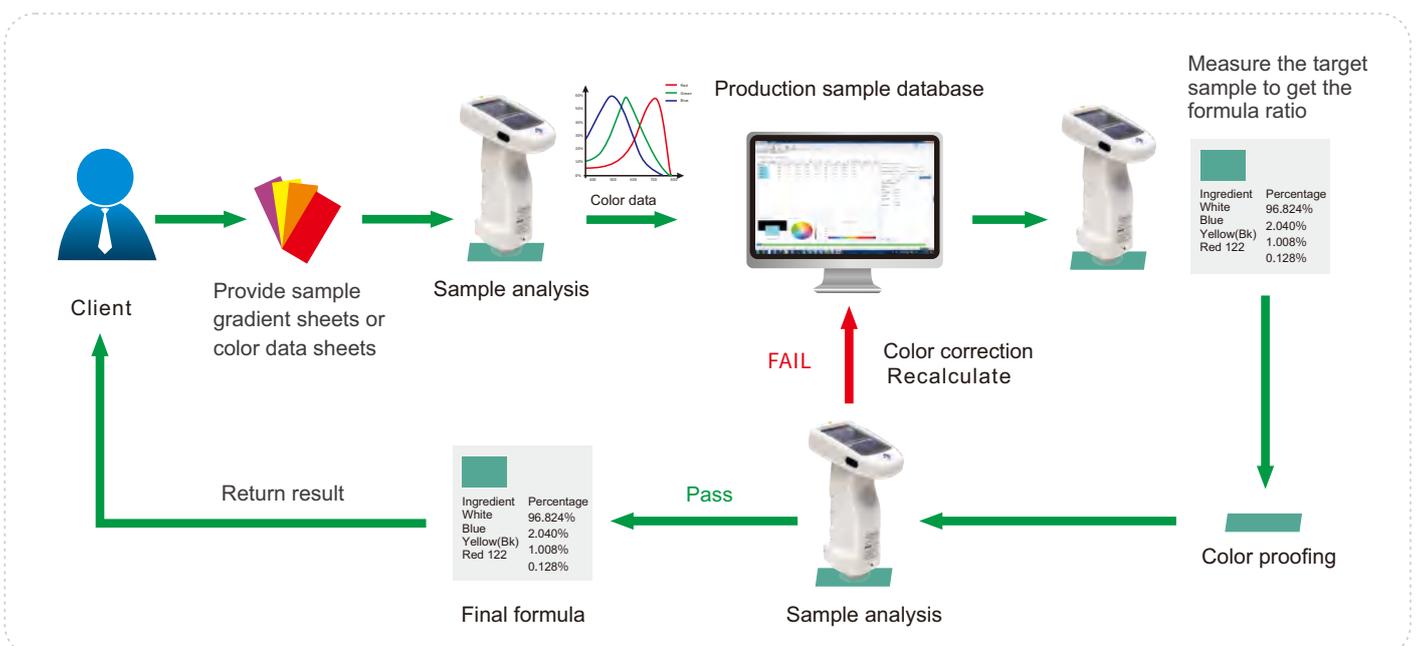


Color matching management: new color matching, formula calculation and optimization, color measurement and color correction



Color detection: standard sample, sample measurement

PECOLOR COLOR MATCHING PROCESS



SQCX

SPECTROPHOTOMETER COMPUTER SOFTWARE

A Powerful Assistant for Color Quality Management



Analysis and management

By connecting SQCX software on PC, the instrument can analyze, copy, delete, modify, name and save the measured data.



Data printing

Compare color differences, generate test reports, and print out the data by connecting to a Bluetooth printer.



Mass storage

The measured data report can be uploaded to the cloud storage. Achieve mass data storage.



Share and pass

The generated test report can be shared and transmitted through a connected computer. Fast exchange of color information to speed up production time.



Download Address:



www.3nh.cn



www.3nh.com

The color management software for computers is an essential component of color measurement instruments. Through the computer software system, a large amount of data can be collected and processed, reducing the level of fatigue and enhancing the real-time performance of the instruments. It also increases the degree of automation of the instruments, and can even enable the entire operation, measurement, and analysis of the instruments to be carried out automatically according to a program, with results displayed in numerical or graphical form. The software can automatically correct certain errors that affect the accuracy of the instruments, thereby improving their precision. Moreover, by leveraging the high-speed computing and storage capabilities of computers, the analysis and measurement speed of the instruments can be significantly increased.

SQCX

CONNECT DEVICES FOR POWERFUL FUNCTIONALITY EXPANSION

SQCX can connect to spectrophotometers via USB cable or Bluetooth (for instruments that support Bluetooth). It allows users to control the instruments for measurement, modify instrument configurations, and manipulate instrument data. Additionally, it significantly enhances the instrument's functionality by supporting various color systems and light sources, as well as more complex data management, color inspection, and report generation. SQCX is a powerful tool for color quality management.



SYSTEM REQUIREMENTS



• **Operating System:** Windows XP SP3, Windows 7, Windows 8, Windows 10. Windows 7 and above are recommended.

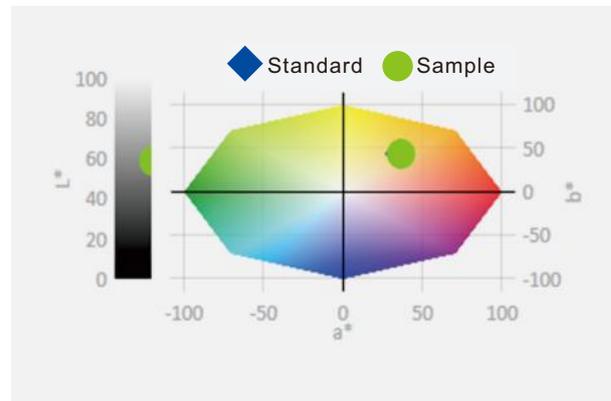
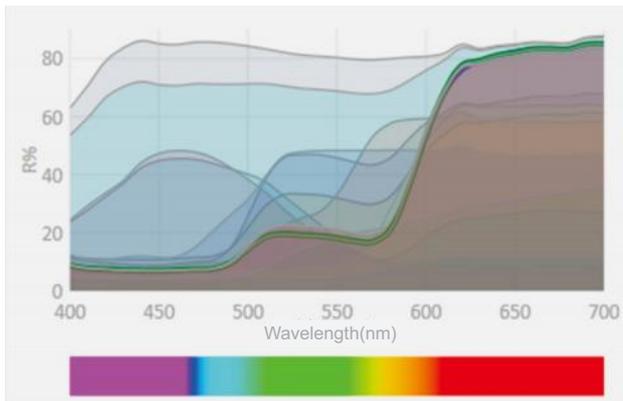
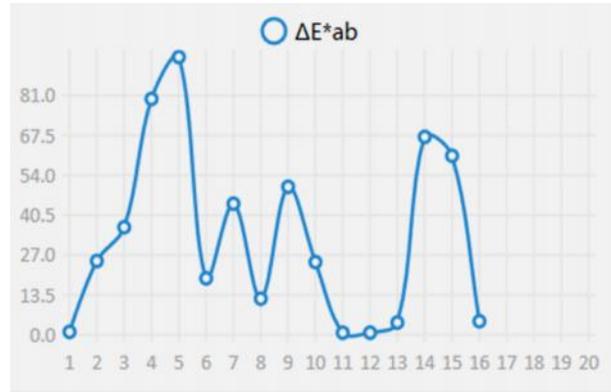
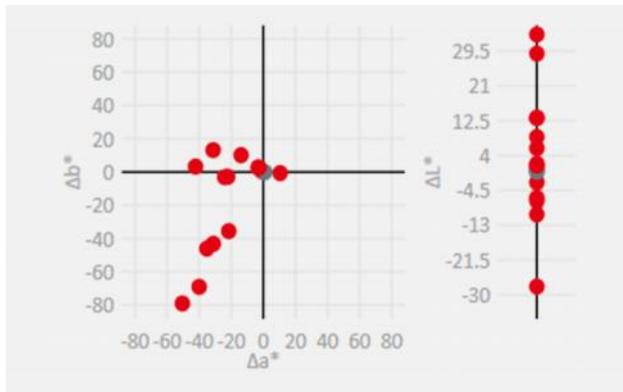


• **Memory:** At least 2 GB.



• **Disk Space:** At least 50 MB required for installation and operation.

SOFTWARE INTERFACE



SUPPORTED MODELS

SQCX Host Computer Software	Adaptive model	Picture	Adaptive model	Picture
	TS77 series		TS85 series	
	TS-70 series		YS60 series	
	PS20 series		YS45 series	
	TS70 series		YS30 series	
	YL series		TS8 series	



TS8560

Benchtop Spectrophotometer

The TS8560 Benchtop Spectrophotometer features a dual-array CMOS image sensor, which provides high sensitivity and a broad spectral response range, ensuring more accurate measurements. It is equipped with a 10.5-inch independent rotatable tablet computer for convenient and efficient operation. The instrument supports both pulsed xenon lamp and LED illumination methods. Its reflectance color value repeatability is $\Delta E_{ab} \leq 0.01$, and the inter-instrument difference is controlled within 0.1, ensuring stable and reliable data.



Multi-aperture support



Camera positioning



Dual optical path system



SCI+SCE Synchronous measurement

PRODUCT FEATURES

1. A 10.5-inch independent rotatable tablet with 64 GB storage space and a camera for real-time preview.
2. The instrument can be placed in various positions for measurement, including side measurement, upward measurement, and downward measurement (with accessories).
3. An open transmission chamber that can test transmission samples up to 54 mm in thickness.
4. Automatic temperature and humidity compensation function.
5. Built-in full-spectrum, long-life LED light source and xenon light source, providing better recognition for testing fluorescent samples.

Fully functional worry-free color measurement

Independent research and development, accurate and reliable, core technology; Color difference, haze, transmittance measurement in one machine.

01

The built-in camera provides framing and positioning functions. By capturing real-time images through the camera, it can accurately determine whether the measured part of the object is at the target center, thereby improving measurement efficiency and accuracy.

02

Equipped with four measurement apertures of $\Phi 25.4$ mm, 15 mm, 8 mm, and 4 mm, the device allows users to configure the aperture size and lens position according to their needs, accommodating special measurement requirements.

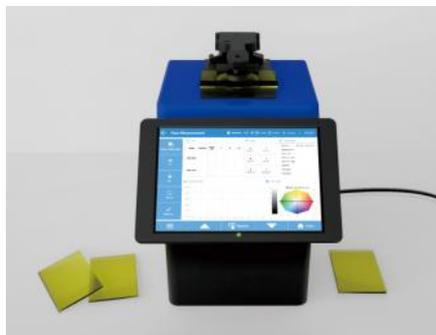
03

Over 40 measurement parameters are provided, along with 41 customizable observation light sources (some of which are implemented via a host computer), including: D65, A, C, D50, D55, D75, etc. These capabilities meet special measurement requirements under various measurement conditions.

MEASUREMENT EXAMPLE



Reflective Measurement:
Measurement of plastics, fabrics, hardware, printing, etc.



Vertical Measurement:
Capable of placing petri dishes, with no limitation on sample size.



Transmissive Measurement:
liquids, gels, color difference, transmittance, haze.

APPLICATION FIELDS

The TS8560 benchtop spectrophotometer is suitable for quality monitoring and color data management in various industries. It is widely used in plastic electronics, paint ink, textile and clothing printing and dyeing, printing and other industries.



SPECIFICATION PARAMETER

Model	TS8560 (LED light source+xenon lamp)	TS8520 (LED light source)	TS8510 (LED light source)	TS8500 (LED light source+xenon lamp)
Optical Geometry	Reflect: D/8 (diffused illumination, 8-degree viewing angle); SCI (specular component included) / SCE (specular component excluded) ; Include UV/excluded UV light source; Transmittance: D/0 (diffuse illumination: 0° viewing); SCI (specular component included)/SCE (specular component excluded) ; Include UV/excluded UV light source; HAZE (ASTM D1003);			
Standards Compliant	CIE No.15, GB/T 3978, GB/T 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7, JIS Z8722 Condition C			
Integrating Sphere Size	Φ154 mm			
Light Source Device	360~780 nm combined LED light source, including UV, 400 nm cut-off light source, 420 nm cut-off light source, 360-780 nm xenon lamp	360~780 nm combined LED light source, including UV, 400 nm cut-off light source, 420 nm cut-off light source, 460 nm cut-off light source	360~780 nm combined LED light source, including UV, 400 nm cut-off light source, 420 nm cut-off light source, 360-780 nm xenon lamp	360~780 nm combined LED light source, including UV, 400 nm cut-off light source, 420 nm cut-off light source, 360-780 nm xenon lamp
Spectroscopic method	Concave grating			
Sensor	256 Image Element Double arrays CMOS Image Sensor			
Wavelength Range	360 ~ 780 nm			
Wavelength interval	10 nm			
Semiband Width	5 nm			
Measured Reflectance Range	0 ~ 200%			
Reflectivity Resolution	0.01			
Measuring Aperture	Reflective: XLAV Φ25.4 mm/Φ30 mm; LAV Φ15 mm/Φ18 mm; MAV Φ8 mm/Φ10 mm; SAV Φ4 mm/Φ6 mm Transmissive: Φ25.4 mm Φ25.4 mm (No limit on sample height and width, but thickness ≤ 54 mm) Remark: 1. Automatic identification of aperture switch 2. Customized Configuration caliber and lens position			
Specular Component	Reflectance SCI/SCE, Transmittance: SCI/SCE			
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, Musell, s-RGB, HunterLab, βxy, DIN Lab99			
Color difference formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , DIN $\Delta E99$, ΔE (Hunter), ΔE^*CH , 555 Color tone classification			
Other Colorimetric Index	WI(ASTM E313, CIE/ISO, AATCC, Hunter, Taube, Berger Stensby), YI(ASTM D1925, ASTM 313), ISO brightness, R457 MI (Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, APHA/Hazen/Pt-Co Index, Gardner Index Haze, Transmission(ASTM D1003), Saybolt index, ASTM D1500 Color code, 8° Gloss, 555 Index, carbon(My, dM), Color density CMYK(A, T, E, M), Tint, Color density (part function achieved via software in PC)			
Observer Angle	2°/10°			
Illuminant	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, TL83, TL84, TPL5, U30, B, U35, NBF, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2, LED-C2, LED-C3, LED-C5, Customizable light sources (a total of 41 types of light sources, some implemented through the upper computer)			
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset, Color assessment, haze, liquid chromaticity			
Measuring Time	About 2.0 s (Measure SCI & SCE meantime about 4 s)			
Repeatability	ΔE^*ab within 0.01	ΔE^*ab within 0.014	ΔE^*ab within 0.015	
	Reflection chromaticity value: Φ 25.4 mm/SCI, ΔE^*ab (after preheating and calibration of the instrument, measure the average standard deviation of the whiteboard 30 times at an interval of 5 seconds); Spectral reflectance/transmittance: ≤ 0.1%			
Inter-instrument Error	Within ΔE^*ab 0.1	Within ΔE^*ab 0.14	Within ΔE^*ab 0.15	Within ΔE^*ab 0.2
Dimension	L * W * H = 440 x 248 x 283 mm			
Weight	Approx. 13.5 kg			
Power	AC 24V, 3A Power adapter power supply			
Illuminant Life Span	5 years, more than 3 million times measurements.			
Display	10.5 inch independent rotatable tablet			
Data Port	USB, Bluetooth			
Data storage	64 G storage, above 50,000pcs			
Language	Simplified Chinese, Traditional Chinese, English (Optional Customized German, Russian, French, Spanish, Japanese, Thai, Korean, Polish, Portuguese)			
Standard Accessory	Power Adapter, User Guide, U Disk(PC Software), USB cable, Standard Calibration Board, Black Calibration Cavity, Transmission black baffle, Sample holder, 25.4 caliber, 15 caliber, 8 caliber, 4 caliber, Transmissive Test Component, cuvette, 10.5-inch screen			

YS6060

Benchtop Spectrophotometer

The Benchtop grating spectrophotometer YS6060 features high accuracy and stability, and is capable of meeting demanding testing standards. It is the preferred device in color management solutions for color matching, production, and quality inspection.

“ Compliant with the measurement requirements of Chinese, American, and European pharmacopeias. ”



MEASUREMENT EXAMPLE

The Benchtop grating spectrophotometer YS6060 features high accuracy and stability, and is capable of meeting demanding testing standards. It is the preferred device in color management solutions for color matching, production, and quality inspection.



Reflective Measurement:

can be used for reflective measurement of samples such as powders and color masterbatches.

Transmissive Measurement:

supports transmission measurement of samples such as liquids, transparent and translucent substances.



High hardware configuration: 7-inch TFT full-color capacitive touch screen; concave grating.



Built-in camera for view finding and positioning.



Supports the measurement of sample reflection and transmission.



Supports powerful expansion functions of PC-side software.



01 A variety of optional accessories: reflection sample holder, transmission fixture, micro-hole 4 mm transmission holder, instrument inversion holder, suitable for more working conditions.

02 Measures the reflectance and transmittance spectra of samples, with precise Lab data suitable for color matching and accurate color communication.

03 Automatic aperture recognition, with four apertures (25.4 mm, 15 mm, 8 mm, and 4 mm) that can be switched at will, while also accommodating special customer needs.

04 Temperature monitoring and compensation, with an internal temperature sensor to monitor and compensate for the testing environment, ensuring more accurate measurement results.

05 Measurement wavelength range of 360–780 nm, with built-in 400 nm cutoff/420 nm cutoff, for more professional UV testing.

06 Independent light source detector, constantly monitoring changes in the light source to ensure its reliability.

07 Dual-array 256-pixel CMOS detector; high-lifetime stable full-spectrum LED/UV LED.

08 Multiple measurement modes: quality control mode, sample mode, to meet the needs of more customers.

09 Large storage capacity, capable of storing approximately 40,000 test data records.

10 High hardware configuration: 7-inch TFT full-color capacitive touch screen; concave diffraction grating; built-in camera for framing and positioning.



Inverted Component of the Instrument (Optional)

The inverted component of the instrument, when paired with a cuvette, can measure color masterbatches and powders.



SPECIFICATION PARAMETER

Model	YS6060	YS6010	
Optical Geometry	Reflectance: d/8 (SCI&SCE; Include UV/Exclude UV) Transmittance: d/0 (SCI&SCE; Include UV/Exclude UV) Conforms to CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7		
Integrating Sphere Size	Φ154 mm		
Illuminant	360 nm-780 nm Combined LED Lamp, 400 nm cut-off, 420 nm cut-off, UV Lamp	360 nm-780 nm Combined LED Lamp, 400 nm cut-off	
Sensor	256 Image Element Double Array CMOS Image Sensor		
Wavelength Pitch	10 nm		
Semiband Width	5 nm		
Reflectance Range	0~200%		
Measuring Aperture	Reflective: Φ30 mm/Φ25.4 mm, Φ18 mm/Φ15 mm, Φ10 mm / Φ8 mm, Φ6 mm/Φ4 mm; Transmissive: Φ30 mm/Φ25.4 mm	Reflective: Φ30 mm/Φ25.4 mm, Φ10 mm/Φ8 mm, Φ6 mm/Φ4 mm; Transmissive: Φ30 mm/Φ25.4 mm	
Specular Component	Reflectance: SCI&SCE Transmittance: SCI&SCE		
Color Space	CIE LAB, XYZ, Yxy, Lch, CIE LUV, Musell, s-RGB, HunterLab, βxy, DIN Lab99		
Color Difference Formula	ΔE ab, ΔE uv, ΔE 94, ΔE cmc(2:1), ΔE cmc(1:1), ΔE 00, DINΔE99, ΔE(Hunter)		
Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), MI (Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, 8° Glossiness, Gardner Index, APHA/ Pt-Co Index, 555 Index, Haze(ASTM D1003), Saybolt, Color code (ASTM D1500)		
Observer	2°/10°		
Illuminants	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, Ti83, Ti84, TPL5, U30		
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset		
Measurement time	About 2.4 s (simultaneous measurement SCI/SCE about 5 s)		
Repeatability	Spectral reflectance: Φ25.4 mm/SCI	Standard deviation within 0.04% (400 nm to 700 nm: within 0.04%)	Standard deviation within 0.05%
	Chromaticity value: Φ25.4 mm/SCI	Standard deviation within ΔE*ab 0.01	Standard deviation within ΔE*ab 0.02
	Spectral Transmittance: Φ25.4 mm /SCI	Standard deviation within 0.05% (400 nm to 700 nm: within 0.04%)	
	Chromaticity value: Φ25.4 mm/SCI	Standard deviation within ΔE*ab 0.02	Standard deviation within ΔE*ab 0.03
Inter-instrument Error	Φ25.4 mm/SCI Within ΔE*ab 0.12 (Average for 12 BCRA Series II color tiles)	Φ25.4 mm/SCI, Within ΔE*ab 0.15	
Size	L * W * H = 370 x 300 x 200 mm		
Weight	9.6 kg		
Power Supply	DC 24V, 3A Power Adapter		
Light Source Device Life	5 years, more than 3 million times measurements.		
Screen	7" TFT Capacitive Screen-touch Display		
Data Port	USB & Bluetooth	USB	
Data Storage Capacity	Standard: 5,000 Pcs; Sample: 40,000 Pcs.(One PCS can include both SCI and SCE)	Standard: 2,000 Pcs; Sample: 20,000 Pcs	
Language	Simplified Chinese, Traditional Chinese, English, (Optional Customized German, French and Spanish)		
Working Environment	Temperature: 0 ~ 40°C; Humidity: 0 ~ 85% (No Condensation)		
Storage Environment	Temperature: -20 ~ 50°C; Humidity: 0 ~ 85% (No Condensation)		
Standard Accessory	Power Adapter, User Guide, CD Disk (PC Software), USB cable, Standard Calibration Board, Black Calibration Cavity, Transmission black baffle, Sample holder, 25.4 mm caliber, 15 mm caliber, 8 mm caliber, 4 mm caliber, Transmissive Test Component, Micro Aperture(4 mm) transmission test clamp component	Power Adapter, User Guide, CD Disk (PC Software), USB cable, Standard Calibration Board, Black Calibration Cavity, Transmission black baffle, Sample holder, 25.4 caliber, 8 caliber, 4 caliber	
Optional Accessory	Micro-printer	Micro-printer, Transmissive Test Component, Instrument inversion components, culture dish	

SPECIFICATION PARAMETER

Model	YS6080 (Xenon lamp)		YS6020 (Xenon lamp)	
Optical Geometry	Reflection: D/8 (diffuse illumination, 8° direction reception), transmission: D/0 (diffuse illumination, 0° direction reception), SCI/SCE measurement, including UV/exclude UV measurement; haze (ASTM D1003);			
Standards compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7			
Integrating Sphere Size	Φ154 mm			
Illuminant	360 nm ~ 780 nm Xenon lamp, 400/420/460 nm cut-off		360 nm ~ 780 nm Xenon lamp, 400 nm cut-off	
Sensor	256 Image Element Double Array CMOS Image Sensor, Concave-grating			
Wavelength Pitch	10 nm			
Semiband Width	5 nm		10nm	
Reflectance Range	0~200%			
Measuring Aperture	Reflective: Φ30 mm/Φ25.4 mm, Φ18 mm / Φ15 mm, Φ10 mm/Φ8 mm, Φ6 mm/Φ4 mm; Transmissive: Φ30 mm/Φ25.4 mm;		Reflective: Φ30 mm/Φ25.4mm, Φ10 mm/Φ8 mm, Φ6 mm/Φ4 mm; Transmissive: Φ30 mm/Φ25.4 mm;	
Specular Component	Reflectance: SCI & SCE Transmittance: SCI & SCE			
Color Space	CIE LAB, XYZ, Yxy, Lch, CIE LUV, Musell, s-RGB, HunterLab, βxy, DIN Lab99			
Color Difference Formula	ΔE_{ab} , ΔE_{uv} , ΔE_{94} , $\Delta E_{cmc}(2:1)$, $\Delta E_{cmc}(1:1)$, ΔE_{00} , $DIN\Delta E_{99}$, $\Delta E_{(Hunter)}$			
Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), MI (Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, Gardner Index, APHA/Pt-Co Index, 555 Index, Haze (ASTM D1003), Saybolt, Color code (ASTM D1500)			
Observer	2°/10°			
Illuminants	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, TL83, TL84, TPL5, U30			
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset			
Measurement time	About 2.4 s (simultaneous measurement SCI/SCE about 5s)			
Repeatability	Spectral reflectance: Φ25.4 mm/SCI	Standard deviation within 0.06%		Standard deviation within 0.07%
	Chromaticity value: Φ25.4 mm/SCI	Standard deviation within ΔE^*ab 0.012		Standard deviation within ΔE^*ab 0.015
	Spectral Transmittance: Φ25.4 mm/SCI	Standard deviation within 0.06%		Standard deviation within 0.07%
	Chromaticity value: Φ25.4 mm/SCI	Standard deviation within ΔE^*ab 0.015		Standard deviation within ΔE^*ab 0.018
Inter-instrument Error	Φ25.4 mm/SCI Within ΔE^*ab 0.12 (Average for 12 BCRA Series II color tiles)		Φ25.4mm / SCI, Within ΔE^*ab 0.15	
Size	L * W * H = 370 x 300 x 200 mm			
Weight	about 9.6 kg			
Power Supply	DC 24V, 3A Power Adapter			
Light Source Device Life	5 years, more than 3 million times measurements.			
Screen	7" TFT Capacitive Screen-touch Display			
Data Port	USB & Bluetooth, Print serial port		USB, Print serial port	
Data Storage Capacity	Standard: 5,000 Pcs; Sample: 40,000 Pcs. (One PCS can include both SCI and SCE)		Standard: 2,000 Pcs; Sample: 20,000 Pcs.	
Language	English & Chinese			
Working Environment	Temperature: 0 ~ 40°C; Humidity: 0 ~ 85% (No Condensation)			
Storage Environment	Temperature: -20 ~ 50°C; Humidity: 0 ~ 85% (No Condensation)			
Standard Accessory	Black Calibration Board, Standard calibration plate, Fixing frame Sample Holder, Φ4 mm, Φ8 mm, Φ15 mm, Φ25.4 mm Aperture, Power Adapter, USB Cable, User Guide, PC Software, Transmissive Test Clamp Component, Transmission blackboard		Black Calibration Board, Standard calibration plate, Sample Holder, Φ4 mm, Φ8 mm, Φ25.4 mm Aperture, Power Adapter, USB Cable, User Guide, PC Software Fixing frame, Transmission blackboard	
Optional Accessory	Micro printer, micro hole (4mm) transmission component, instrument inversion component		Micro printer, transmission test component, micro hole (4mm) transmission component, instrument inversion component	

TS8260

Benchtop Spectrophotometer

The portable desktop spectrophotometer TS8260 is a spectrophotometer developed by 3nh using its own core spectroscopic technology. It features an integrated silicon photodiode array (dual-row, 40 groups) sensor and an imported white calibration tile, balancing measurement speed and ease of operation. The instrument provides accurate measurements and is suitable for precise color analysis and communication in laboratory settings.



Extensive Compatibility and Recognition

Developed in strict compliance with globally accepted industry standards such as CIE, ASTM, DIN, and ISO, it offers extensive compatibility and high recognition.



Portability

The TS8260 is a very compact desktop device. It combines the high precision and stability of a desktop machine with the convenience of easy portability.



Dual-Array CMOS Image Sensor

Adopting a dual-array CMOS image sensor and a large-aperture integrating sphere design ensures the uniformity and accuracy of color data acquisition for samples.



Color Management Software

When paired with the SQCX Quality Management Software, it can digitize color management data, compare color differences, generate test reports, and tailor color management tasks to meet customer needs.

APPLICATION FIELDS

The TS8260 is suitable for precise color measurement and quality control in industries such as plastic electronics, paints and inks, textile printing and dyeing, printing, and ceramics. It can also be used for the measurement of fluorescent samples.

PRECISION COLOR MEASUREMENT AND QUALITY CONTROL

The measurement aperture can be freely switched between $\Phi 8$ mm and $\Phi 4$ mm. It supports both horizontal and vertical measurement modes, offering greater versatility.



Packaging carton measurement



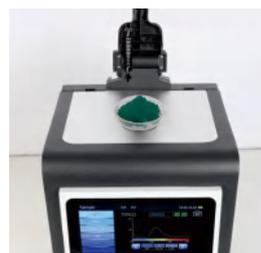
Metal measurement



Leather measurement



Liquid measurement



Powder measurement

FUNCTIONAL INTERFACE

- ✓ Spectral Chart/Data
- ✓ Pass/Fail Results
- ✓ Whiteness, Yellowness
- ✓ Colorfastness
- ✓ Stainfastness

- ✓ Sample Colorimetric Values
- ✓ Color Bias
- ✓ Metamerism Index
- ✓ Strength
- ✓ 8° Gloss

- ✓ Color Difference Values/Charts
- ✓ Colorfastness to Rubbing
- ✓ Opacity
- ✓ 555 Hue Classification

SPECIFICATION PARAMETER

Model	TS8260	TS8210	TS8450
Optical Geometry	D/8(Diffuse illumination, 8° acceptance); SCI&SCE; Include UV/Exclude UV		45/0(45 ring-shaped illumination, 0 degree viewing angle)
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7		
Integrating Sphere Size	Φ40 mm		
Light Source Device	Combined LED Lamp, UV Lamp	Combined LED Lamp	Combined LED Lamp, UV Lamp
Spectroscopic Method	Plane-Grating		
Sensor	Silicon photodiode array (40 groups)		256 Image Element Double Array CMOS Image Sensor
Spectral Range	400 ~ 700 nm		
Wavelength Pitch	10 nm		
Semi-bandwidth	10 nm		
Photometric Range	0 ~ 200%		
Measurement Aperture	MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm	Customized single caliber: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm	Customized single caliber: LAV: Φ18 mm/Φ20 mm; MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm
Light-included Mode	Both SCI & SCE modes		45/0
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, HunterLab, βxy, DIN Lab99 Munsell(C/2)	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, βxy, Munsell(C/2)	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, HunterLab, βxy, DIN Lab99 Munsell(C/2)
Color difference formulas	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1),$ $\Delta E^*cmc(1:1), \Delta E^*00, \Delta E^*00, \Delta E^*00, \Delta E^*00$	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1),$ $\Delta E^*cmc(1:1), \Delta E^*00$	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1),$ $\Delta E^*cmc(1:1), \Delta E^*00, \Delta E^*00, \Delta E^*00$
Other Colorimetric Data	WI(ASTM E313, CIE/ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), Mt(Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, 8 degree gloss, 555 Index	WI(ASTM E313, CIE/ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), Staining Fastness, Color Fastness, Color Strength, Opacity, 8 degree gloss	WI(ASTM E313, CIE/ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), Mt(Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, 555 Index
Observer	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30)	D65, A, C, D50, F2(CWF), F7(DLF), F10(TPL5), F11(TL84), F12(TL83/U30)	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30)
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset		
Measurement Time	About 1.5 s (simultaneous measurement SCI/SCE about 3.2 s)		About 1.8 s
Repeatability	Chromaticity value: MAV/SCI, within ΔE^*ab 0.02	Within ΔE^*ab 0.025	Within ΔE^*ab 0.02
	(After calibration, measure the average value of the whiteboard 30 times at 5s intervals)		
Inter-instrument agreement	MAV/SCI, Within ΔE^*ab 0.15	MAV/SCI, Within ΔE^*ab 0.2	MAV/SCI, Within ΔE^*ab 0.15
	(Average for 12 BCRA Series II color tiles)		
Measurement method	Single measurement, average measurement (2 ~ 99 times)		
Locate Mode	Display camera locating	Display camera locating	/
Size	L * W * H = 370 x 240 x 260 mm		
Weight	about 7.8 kg		
Battery Performance	DC 24V, 3A Power Adapter		
Life Lamp	5 years, more than 3 million times measurements.		
Screen	7" TFT Capacitive Screen-touch Display		
Interface	USB, Bluetooth, Trigger switch interface	USB, Trigger switch interface	USB, Bluetooth, Trigger switch interface
Data storage	Standard: 1,000 Pcs; Sample: 30,000 Pcs.	Standard: 10,00 Pcs; Sample: 20,000 Pcs.	Standard: 1,000 Pcs; Sample: 30,000 Pcs.
	(One PCS can include both SCI and SCE)		
Languages	Chinese, English, traditional Chinese		
Standard Accessories	Power Adapter, USB Cable, User Guide, PC Software (Download from website), Calibration Board		
Optional Accessories	Mini printer, foot switch, rotating bracket		

SPECIALIZED IN MEASURING LIQUID COLORIMETRY

Accurately captures the subtle color differences in liquids.



TS4020

Liquid Spectrophotometer

TS4020 has a wide range of measurement indicators. In addition to commonly used color indicators, it can also provide transparency, petroleum color code (ASTM D1500), platinum cobalt index, Gardner index, Saybolt index, pharmacopoeia (Chinese Pharmacopoeia, European Pharmacopoeia, United States Pharmacopoeia), EBC (beer color) ICUMSA Color and other chromaticity indicators are widely used in the measurement needs of the chemical industry, food and beverage, petrochemical, pharmaceutical industries, and other fields.



OPENING UP A NEW HORIZON IN LIQUID MEASUREMENT

- Its advanced technology, accurate detection results and convenient operation provide a reliable solution for liquid chrominance measurement.
- Built-in temperature monitoring and compensation, built-in temperature sensor, monitoring and compensation of the test environment.
- High hardware configuration: 7-inch TFT pure color TV touch screen, Bluetooth.
- Transmittance, chroma, color difference, platinum-cobalt index, Gardner, Seibert index, petroleum color scale, pharmacopoeia chroma, etc., support micro transmission measurement.



Excellent repeatability and Inter-instrument variation: The repeatability of spectral transmittance is within 0.05%, and the colorimetric value is within 0.01. The inter-instrument variation is within 0.2, ensuring highly consistent measurement results across multiple devices and safeguarding quality control in large-scale production.



Adopting a more precise optical design, it can accurately control the direction of light transmission, reducing the minimum liquid volume required to 1 ml, thus enabling micro-transmission measurement.



The powerful analysis software is suitable for quality management across various industries. It generates test reports from the users' test results, facilitating customized and efficient management for customers.

APPLICATION FIELDS

The liquid spectrophotometer TS4020 is widely used for color measurement needs in various fields such as the chemical industry, food and beverage, petrochemical, and pharmaceutical industries.



Chemical industry



Cosmetics industry



Petrochemical



Food and beverage



Pharmaceuticals

SPECIFICATION PARAMETER

Model	TS4020	TS4010
Lighting Method	Transmission: D/0 (diffuse illumination, 0 ° direction reception); Approximate CIE15 regulation of 0/0 (parallel light illumination / 0 degree reception);	
Compliant with standards	Compliant with standards: ASTM D1003/1044, CIE No.15, GB/T 3978, GB 2893,GB / T 18833, ASTM E308, DIN5033 Teil7	
Characteristic	The national standard pharmacopoeia color measurement, glass processing, plastic processing, film, display screen processing, packaging industry, liquid medicine analysis and other industries are widely used in haze analysis and transmittance testing, supporting trace transmittance measurement	
Integral Sphere Size	Φ40 mm	
Lighting Source	Combined full spectrum LED light source	
Spectral Method	Planar grating spectroscopy	
A Sensor	Silicon photodiode array (double row 40 groups)	
Measuring Wavelength Range	360 - 780 nm	
Wavelength Interval	10 nm	
Half Bandwidth	5 nm	
Transmittance Measurement Range	0 ~ 200%	
Color Space	CIE LAB, XYZ, Yxy, LCh, CIE LUV, Musell, s-RGB, HunterLab, βxy, DIN Lab99, CMYK (partially implemented through upper computer)	
Colour-difference Formula	ΔE^*ab , ΔE^*uv , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , $DIN\Delta E99$, $\Delta E(Hunter)$, ΔE^*CH	
Other Chromaticity Indicators	Transmittance T, Wl(ASTM E313, CIE/ISO, AATCC, Hunter, Taube, Berger, Stensby), Yl(ASTM D1925, ASTM 313), Tl(ASTM E313, CIE/ISO), The same color spectral index Mt, Color fastness, color fastness, absorbance, APHA/Hazen/Pt Co (Platinum Cobalt Index), Gardner Index, Iron Cobalt Index, Saybolt index, ASTM D1500 color code, pharmacopoeia (Chinese Pharmacopoeia, European Pharmacopoeia, United States Pharmacopoeia), EBC (beer color), ICUMSA Color (sugar color)	
Observer's Perspective	2°/10°	
Observing Light Source	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, Tl83, Tl84, TPL5, U30, B, U35, NBF, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2, LED-C2, LED-C3, LED-C5 (a total of 41 light sources, some of which are implemented through the upper computer)	
Display	Spectral chart/data, sample chromaticity value, color difference value/graph, color chart, color simulation, Pass/Fail results, color offset	
Measurement Time	Fast mode takes about 0.8 seconds	
Repeatability	Spectral transmittance: standard deviation within 0.05% (400 ~ 700 nm: within 0.04%):	
	Chromaticity value: ΔE^*ab within 0.01 (measured at intervals of 5 seconds after preheating correction)	Chromaticity value: ΔE^*ab within 0.015
Inter Station Difference	ΔE^*ab within 0.2	ΔE^*ab within 0.25
Size	L * W * H = 370 x 300 x 200 mm	
Weight	About 9.6 kg	
Power Supply Mode	Powered by DC 24V/3A power adapter	
Lighting Source Lifespan	More than 3 million measurements in 5 years	
Display	TFT true color 7-inch, capacitive touch screen	
Interface	USB, Print serial port, Bluetooth	USB, Print serial port
Store Data	1,000 standard samples, 20,000 test samples	1,000 standard samples, 10,000 test samples
Special Features	Intelligent zero calibration	
Language	Simplified Chinese, Traditional Chinese, English	
Operating Temperature Range	0 ~ 40°C (32 ~ 104°F)	
Storage Temperature Range	-20 ~ 50°C (-4 ~ 122°F)	
Standard Attachments	Power adapter, manual, quality management software (official website download), data cable, transmission blackboard, 10 mm colorimetric dish, 50 mm colorimetric dish, 50 mm colorimetric dish fixture, micro hole (4 mm) transmission testing fixture assembly (TS4010 is not equipped with)	
Optional Accessories	Microprinter, 30 mm cuvette, 100 mm cuvette	
Note	If there are any changes, no further notice will be given	

PROFESSIONAL AUTOMOTIVE SURFACE INSPECTION



MS3012

Multi-Angle Spectrophotometer

Color-changing paint

Color flash

Granularity

Glitter

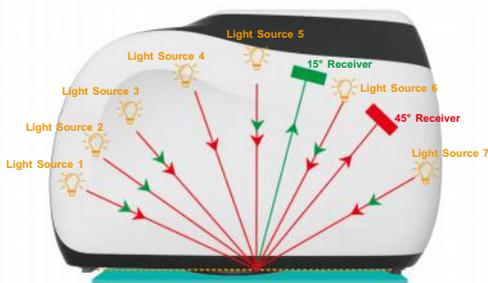
The MS3012 Multi-Angle Spectrophotometer utilizes an industrial-grade MCU and supports 12 measurement angles. It provides precise and consistent color measurement for products with complex special effect colors, such as metallic and pearlescent colors. The smooth operating system and superior optical measurement system enable the MS3012 to offer repeatable and reproducible measurements of glitter, color flash, and granularity.



The Measurement of Sparkle, Color Sparkle, and Graininess Effects

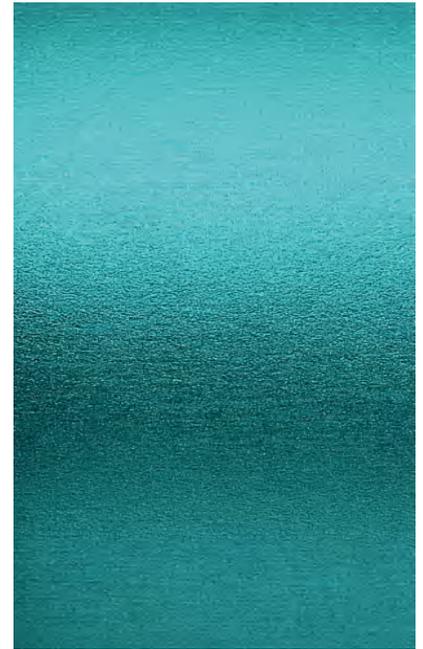
The multi-angle spectrophotometer MS3012 is used to evaluate the surface appearance of effect coatings under different observation angles and conditions. It can measure multi-angle color differences and, with its 12 measurement angles, can measure and characterize special finishes. Even on curved surfaces, it offers high measurement accuracy and stability.

7 light sources and 2 receivers, capable of measuring 12 angles simultaneously.



The MS3012 multi-angle spectrophotometer provides precise and consistent color measurement for products with metallic colors, pearlescent colors, and other complex special effect colors.





It provides various color spaces such as CIE LAB, XYZ, Yxy, Lch, β xy, and DIN Lab99, as well as multiple observation light sources including D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30). These features can meet the special measurement requirements under different measurement conditions.

It employs a 256-pixel dual-array CMOS image sensor. The higher optical resolution ensures the instrument's measurement speed, accuracy, stability, and consistency. By mastering the core technology and aligning with international standards on the same platform, it achieves perfect compatibility.



3.5-inch industrial-grade high-definition touchscreen



Built-in color camera for positioning and framing

It uses a full-spectrum LED light source enhanced with blue light. This ensures sufficient spectral distribution across the visible light range, avoiding the spectral deficiency of LEDs at specific wavelengths. It guarantees the accuracy of the instrument's measurement results and ensures low-cost maintenance.

Model	MS3012	MS3008	MS3006
Measurement Geometry	12 measurement angles (7 illumination sources, 2 receivers)	8 measurement angles (6 illumination sources, 2 receivers)	6 measurement angles (6 illumination sources, 1 receivers)
Measure Angle	45° Receiver: 45as -15°, 45as15°, 45as25°, 45as45°, 45as75°, 45as110°		
	15°Receiver: 15as - 45°, 15as - 15°, 15as15°, 15as - 30°, 15as45°, 15as80°	15°Receiver: 15as - 45°, 15as - 15°	/
	Standards: ASTM D2244, E308, E1164, E2194, E2539, DIN5033, 5036, 6174, 6175-1, 6175-2, ISO 7724, 11664-4, SAE J1545		
Light Source	Full spectrum LED light source with blue enhancement		
Spectrophotometric Mode	Concave Grating		
Sensor	256 Image Element Double Array CMOS Image Sensor		
Spectral Range	400 ~ 700 nm		
Wavelength Interval	10 nm		
Measurement Range	0 ~ 600%		
Semiband Width	10 nm		
Measuring Aperture	Illumination size Φ23 mm / Measuring spot 9 x 12 mm (Customized: Illumination size Φ10 mm/Measuring spot 6 x 8 mm)		
Color Spaces	CIE LAB, XYZ, Yxy, Lch, βxy, DIN Lab99		
Color difference formulas	ΔE^*ab , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , $DIN\Delta E99$, $\Delta E\ DIN6175$		
Other Colorimetric Index	Flop Index		
Observer Angle	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83 / U30)		
Display	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset, Color simulation, Sample effect value, Effect difference value		
Measuring Time	Each angle takes approximately 1 second (excluding effect color testing time).		
Repeatability	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: ΔE^*ab 0.02 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: ΔE^*ab 0.03 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	
Reproducibility	$\Delta E^* < 0.10$, avg on the gray tile of BCRA tile set, $\Delta E^* < 0.25$, avg on the color BCRA tile set		
Inter-instrument Error	0.18 ΔE^*00 (avg on reference Series II BCRA tile set)		0.2 ΔE^*00 (avg on reference Series II BCRA tile set)
Effect Parameters	Sparkle Grade (SG), Diffuse coarseness (DC) and Color Variation (CV)		
Effect Measurement	6 angles Sparkle Grade (SG), Color Variation (CV): 15as - 45°, 15as - 30°, 15as - 15°, 15as15°, 15as45°, 15as80°, 15d Diffuse coarseness (DC)		
Effect Repeatability	Sparkle Grade (SG) Short-term repeatability: 0.12% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration) Diffuse coarseness (DC) Short-term repeatability: 0.09% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration)		
Effect Reproducibility	Sparkle Grade (SG) Reproducibility: 1.9% (10 times standard deviations) (avg on reference Series II BCRA tile set) Diffuse coarseness (DC) Reproducibility: 1.4% (10 times standard deviations) (avg on reference Series II BCRA tile set)		
Trigger mode	Pressure sensing trigger, button trigger, software trigger		
Measuring Mode	Single measurement, average measurement (1 - 99), continuous measurement (1 - 99)		
Locating Mode	Color camera preview		
Dimension	L * W * H = 195 x 83 x 128 mm		
Weight:	About 1 Kg		
Power	lithium-ion battery, 3.7 V, 5,000 mAh, Continuous test 6,000 times within 8 hours of full charge		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB, Bluetooth		
Data Storage	1,000 pcs Standards, 4,000 pcs Samples		
Language	Simplified Chinese, Traditional Chinese, English		
Calibration	Built-in white board parameters, external white board, black light trap, color board		
Calibration Interval	4 hours, 8 hours, 24 hours, Startup calibration		
Standard Accessories	Power Adapter, USB Cable, User Guide, PC Software (download from the official website), Calibration Board, black light trap, Protective cap, wristband		
Optional Accessories	Microprinter		



Specifically designed
for assembly line
production.



YL4568

Non-contact Spectrophotometer

Achieving non-contact precise color measurement for liquids, pastes, powders, and other materials



- Powder Measurement
- Liquid Measurement
- Paste and Sauce Measurement
- Paint and Ink Measurement
- Corrosive substances
- Irregular samples Measurement

PRODUCT INTRODUCTION

The YL4568 spectrophotometer is a color measurement instrument that adopts the 45/0° (45°ring uniform illumination and 0°reception) standard. The test probe and the sample under test are in non-contact mode, enabling non-contact precision color measurement of liquids, pastes, powders, etc. The simple design of the probe allows this instrument to be placed at any position on an automated production line for precise color measurement and color quality control. Its unique and innovative design not only provides a non-contact measurement solution directly from the production line but also ensures stable and highly accurate measurement results.

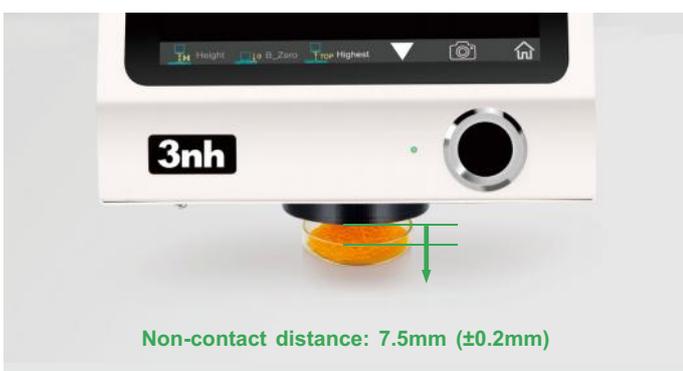
SPECIFICALLY DESIGNED FOR COLOR MEASUREMENT ON ASSEMBLY LINE PRODUCTION AND COLOR QUALITY CONTROL.



The YL4568 Non-contact Spectrophotometer can be placed at any position on the automated production line for precise color measurement and color quality control. Using only the test probe, there are no restrictions on the thickness of the sample being measured, and it features a non-contact distance of 7.5mm (± 0.2 mm).



The measurement time can be adjusted from 0.1 to 1.5 seconds; a complete measurement cycle requires only 200 milliseconds, allowing for more than 400,000 samples to be measured per day.



The YL4568 non-contact spectrophotometer can achieve non-contact precision color measurement of liquids, pastes, powders, strong acids, strong alkalis, and highly corrosive samples. It is widely used in industries such as cosmetics, fruits and vegetables, food hygiene, plastic electronics, paints and inks, printing, and ceramics.



APPLICATION FIELDS

SPECIFICATION PARAMETER

Model	YL4568	YL4568L	YL4668	YL4668L
Lighting Method	45/0 (45° annular uniform illumination, 0° reception)		D/8 (diffuse illumination, 8° directional reception, SCI includes specular reflected light)	
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724 - 1, ASTM E1164, DIN5033 Teil7			
Light Source Device	Full - spectrum LED light source, UV light source			
Spectroscopic Method	Concave-grating			
Sensor	256 image Element Double arrays CMOS Image Sensor			
Spectral Range	400 ~ 700 nm/10 nm Output			
Non - contact Distance	7.5 mm (± 0.2mm)		3.0mm (± 0.2 mm)	
Sample Height	Thickness is unlimited, only use the test probe			
Height range	0 ~ 150 mm			
Reflectance Measurement Range	0 ~ 200%			
Measuring Aperture	Φ20 mm (customizable Φ10 mm, Φ4 mm)		Φ20 mm (customizable Φ10 mm)	
Adjustment method	Based on the fixed height of the actual sample			
Measurement mode	Software - customized function (additional customized functions need to be evaluated)			
Positioning	Camera positioning			
Color Spaces	CIE LAB, XYZ, Yxy, LCh, CIE LUV, Musell, s - RGB, HunterLab, ΔE*ab, DIN Lab99			
Color difference formulas	ΔEab, ΔE94, ΔEcmc(2:1), ΔEcmc(1:1), ΔE*00, ΔE (Hunter), DINΔE99			
Other Colorimetric Data	WI (ASTM E1313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM E1313), metamerism index MI, color saturation, color change saturation, whiteness, hiding power			
Observer	2°/10°			
Illuminant	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6 (DLF), F8, F9, F10 (TL5), F11 (TL84), F12 (TL83/U30)			
Displayed Data	Spectral diagram/data, sample colorimetric value, color difference value/diagram, color simulation, pass/fail result, display tolerance can be set			
Measurement Time	Fastest 0.2 seconds			
Repeatability	Under the optimal test mode (single - measurement time 1.5 seconds): Spectral reflectance: standard deviation within 0.1%; Colorimetric value: ΔE*ab within 0.03 (after preheating, average value of 30 measurements of the white plate with an interval of 5s)			
Inter-instrument agreement	ΔE*ab within 0.2 (average value of 12 color plate measurements of BCRA series II)			
Measurement method	Single measurement, average measurement (2 ~ 99 times)			
Size	L * W * H = 200 x 200 x 160 mm (test probe)			
Weight	Approximately 3 Kg (test probe only)			
Battery Performance	DC 24V, 3A power adapter power supply			
Life Lamp	5 years, more than 3 million times measurements.			
Screen	7" TFT Capacitive Screen-touch Display			
Interface	USB, Bluetooth®			
Data storage	Sample mode + tube mode 18,000 strips, continuous statistics mode 30,000 strips, total not exceeding 48,000 strips			
Languages	Simplified Chinese, Traditional Chinese, English			
Operating Environment	Temperature: 0 ~ 40°C; Humidity: 0 ~ 85% (No Condensation)			
Storage Environment	Temperature: -20 ~ 50°C; Humidity: 0 ~ 85% (No Condensation)			
Standard Accessories	Power adapter, instruction manual, data cable, standard calibration plate, black calibration box			

PROVIDES A NON-CONTACT MEASUREMENT SOLUTION FOR THE PRODUCTION LINE.



YL4560

Non-contact Spectrophotometer

The unique and innovative design of the YL4560 not only provides non-contact measurement solutions directly from the production line, but also ensures stable and high-precision measurement results.

45/0

Non - contact, 45/0 geometric optical structure, measures the reflectance and colorimetric values of objects.



Movable measuring head, which can move up and down according to the actual height of the measured object.



Touch - type large - screen measurement interface, which displays measurement data in real - time.



Multiple measurement modes (sample, tube, continuous statistics mode) are available to meet personalized needs.

The unique and innovative design of the YL4560 not only provides non-contact measurement solutions directly from the production line, but also ensures stable and high-precision measurement results. It has a wide range of applications in industries such as cosmetics, fruits and vegetables, food hygiene, plastic and electronics, paint and ink, printing, ceramics, etc.



PRODUCT FEATURES



SPECIFICATION PARAMETER

Model	YL4560	YL4520
Optical Geometry	45/0(45°Ring uniform illumination, 0°accept)	
Standards Compliant	CIE No.15, GB/T 3978, Gb2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7	
Light Source Device	360 nm -780 nm Combined LED Lamp, UV Lamp	360 nm - 780 nm Combined LED Lamp
Spectroscopic Method	Concave-grating	
Sensor	256 limage Element Double arrays CMOS Image Sensor	
Spectral Range	400 ~ 700 nm/10 nm Output	
Sample distance	> 7.5 mm	
Height adjustment	Manual adjustment, automatic adjustment (the test height can be stored)	
Height range	0 ~ 150 mm	
Photometric Range	0 ~ 200%	
Integrating Sphere Size	Φ20 mm (Customized < 20 mm)	Φ20 mm
Measurement mode	Sample mode, quality control mode, continuous statistical mode	
Locate Mode	Display camera locating	
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, HunterLAB	
Color difference formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , ΔE^*cmc (2:1), ΔE^*cmc (1:1), ΔE^*00 , ΔE (Hunter)	
Other Colorimetric Data	WI(ASTM E313, CIE / ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), MI(Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity	
Observer	2°/10°	
Illuminant	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30)	
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset	
Measurement Time	About 1.5 s	
Repeatability	Spectral reflectance:Standard deviation within 0.08% (400 to 700 nm: within 0.18%)	
	Chromaticity value: within ΔE^*ab 0.05	Chromaticity value: within ΔE^*ab 0.03
	After calibration, measure the average value of the whiteboard 30 times at 5s intervals	
Inter-instrument agreement	Within ΔE^*ab 0.2 (Average for 12 BCRA Series II color tiles)	Within ΔE^*ab 0.25 (Average for 12 BCRA Series II color tiles)
Measurement method	Single measurement, average measurement (2 ~ 99 times)	
Dimension	L * W * H = 330 x 250 x 370 mm	
Weight	about 10 Kg	
Battery Performance	DC 24V, 3A power adapter	
Life Lamp	5 years, more than 3 million times measurements.	
Screen	7" TFT Capacitive Screen-touch Display	
Interface	USB, Bluetooth	USB
Data storage	Sample mode + quality control mode 40,000; continuous statistics mode 10,000	Sample mode + quality control mode 30,000; continuous statistics mode 10,000
Languages	English & Chinese	
Operating Environment	Temperature: 0 ~ 40°C; Humidity: 0 ~ 85% (No Condensation)	
Storage Environment	Temperature: -20 ~ 50°C; Humidity: 0 ~ 85% (No Condensation)	
Standard Accessories	Power Adapter, USB Cable, User Guide, PC Software(Download from website), Standard calibration plate, Black Calibration Board	
Optional Accessories	Micro Printer, Powder test box	

MAKE COLOR DIFFER

Powerful functionality, superior



TS7700 Spectrophotometer

The TS7700 spectrophotometer is a multifunctional color management tool with a dual-aperture configuration and the internationally recognized D/8 geometry. It features a high-performance internal testing system that can quickly and accurately capture the surface color of objects within the spectral range of 400 ~ 700 nm, enabling precise acquisition and measurement of various colorimetric data.

The TS7700 is equipped with a user-friendly interface that is easy to operate and intuitive. It also has the ability to perform rapid measurements and transfer data efficiently. It is widely used in industries such as plastics and electronics, paints and coatings, textile dyeing and printing, paper products, automotive, medical, cosmetics, and food, as well as in research institutions and laboratory settings.

1

Meets international and domestic color measurement standards.

2

The dual-optical-path system, combined with proprietary algorithms, ensures more precise measurements.

3

Adopts a larger-area silicon photodiode dual 40-array sensor

4

With dual measurement apertures of 8 mm and 4 mm, the measurement range is significantly broader.



APPLICATION FIELDS

DIFFERENCES NOWHERE TO HIDE

...r performance, easy operation, and fast measurement speed.

The TS7700 spectrophotometer has excellent repeatability and inter-instrument difference. The repeatability is guaranteed to be within $\Delta E_{ab} \leq 0.03$, and the inter-instrument difference is within $\Delta E_{ab} \leq 0.15$. This ensures the consistency of measurement data among multiple devices, making it suitable for color matching and precise color communication.

Equipped with a 3.5-inch true-color capacitive touch screen, it enables excellent human-machine interaction and provides users with an outstanding visual experience.

It can store up to 1,000 standard samples and 3,000 test samples for quick access to existing data.

The single measurement mode and average measurement mode can be easily switched to meet the measurement needs of different users. The measurement mode can also be set according to the measured product to SCI, SCE or I + E. The measurement time for SCI or SCE alone is about 1.5 seconds, and the simultaneous measurement of SCI + SCE takes about 3.2 seconds.

It offers a wide range of color spaces, including CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, Hunter Lab, β_{xy} , DIN Lab99, and Munsell(C/2), as well as multiple illuminants such as: D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), and F12(TL83/U30). These features can meet the special measurement requirements under different measurement conditions.



DESKTOP COLOR MANAGEMENT SOFTWARE - SQCX

Enable more functional extensions

The TS7700 spectrophotometric colorimeter can achieve mobile and cloud-based color data management and sharing by connecting to computer-based color measurement software. It is suitable for quality monitoring and color data management in various industries.



A POWERFUL TOOL FOR COLOR QUALITY MANAGEMENT

The PC software SQCX can connect to the spectrophotometer via USB cable or Bluetooth. It allows users to control the instrument for measurement, modify the instrument's configuration, and manage the data collected by the instrument. Additionally, it significantly extends the functionality of the instrument, enabling complex data management, color inspection, report generation, and more. It is a powerful tool for color quality management.



Analyze and manage data

The instrument can connect to the SQCX software on the PC to perform operations such as analyzing, copying, deleting, modifying, naming, and saving the measured data.



Share and transfer

The generated test reports can be shared and transferred by connecting to a computer. This facilitates rapid communication of color information and accelerates production time.



Massive storage

The measured data reports can be uploaded to cloud storage, enabling massive data storage.



Print data

Compare color differences and generate test reports. The data can be printed out by connecting to a Bluetooth printer.

SPECIFICATION PARAMETER

Model	TS7708	TS7700	TS7600
Optical Geometry	Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI & SCE; Include UV/Exclude UV		Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI&SCE; Exclude UV
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7		
Integrating Sphere Size	Φ40mm		
Light Source	Combined full spectrum LED light source, UV light source		
Spectroscopic Method	Flat Grating		
Sensor	Silicon photodiode array (double row 40 groups)		
Spectral Range	400 ~ 700 nm		
Wavelength Pitch	10 nm		
Semi-bandwidth	10 nm		
Photometric Range	0 ~ 200%		
Measurement Aperture	Three apertures: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm; LAV: 1 x 3 mm LAV 1 x 3 mm: slightly worse accuracy, can be used for color difference test	Double aperture: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm	Customized one aperture: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm
Specular Component	SCI & SCE		
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, HunterLab, βxy, DIN Lab99, Munsell (C/2)		
Color difference formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , ΔE^*cmc (2:1), ΔE^*cmc (1:1), ΔE^*00 , DIN $\Delta E99$, ΔE (Hunter)		
Other Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), MI (Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, 8° Glossiness, 555 tone classification		
Observer Angle	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30)		
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset		
Measurement Time	About 1.5 s (Measure SCI & SCE about 3.2s)		
Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.08% (400 to 700 nm: within 0.18%)		Spectral reflectance: MAV/SCI, Standard deviation within 0.1% (400 to 700 nm: within 0.20%)
	Chromaticity value: MAV/SCI, within ΔE^*ab 0.03		Chromaticity value: MAV/SCI, within ΔE^*ab 0.04
	(After calibration, measure the average value of the whiteboard 30 times at 5s intervals)		
Inter-instrument agreement	MAV/SCI, Within ΔE^*ab 0.15 (Average for 12 BCRA Series II color tiles)		MAV/SCI, Within ΔE^*ab 0.15 (Average for 12 BCRA Series II color tiles)
Measurement Mode	Single measurement, Average measurement (2 ~ 99 times)		
Locating Method	Camera Locating, stabilizer cross position		
Dimension	L * W * H = 129 x 76 x 217 mm		
Weight	Appro x 600 g		
Battery	Li-ion battery, 6000 measurements within 8 hours		
Life Lamp	5 years, more than 3 million times measurements.		
Screen	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB, Bluetooth		
Data storage	Standard: 10,000 Pcs; Sample: 30,000 Pcs.(One PCS can include both SCI and SCE)		Standard: 10,000 Pcs; Sample: 20,000 Pcs. (One PCS can include both SCI and SCE)
Languages	Simplified Chinese, English, Traditional Chinese		
Operating Environment	Temperature: 0 ~ 40°C; Humidity: 0 ~ 85% (No Condensation) Altitude: less than 2000m		
Storage Environment	Temperature: -20 ~ 50°C; Humidity: 0 ~ 85% (No Condensation)		
Standard Accessories	Power Adapter, User Guide, PC Software (Download from office website), USB cable, White and Black Calibration Cavity, Protective Cover, Wrist strap, 8 mm flat aperture, 8 mm tip aperture, 4 mm flat aperture, 4 mm tip aperture, 1 x 3 mm tip aperture (only for T57708)		Power Adapter, User Guide, PC Software (Download from office website), USB cable, White and Black Calibration Cavity, Protective Cover, Wrist strap, One aperture (8 mm or 4 mm)
Optional Accessories	Miniature Printer, Powder Test Box, Multi-function Test Assembly, Placement Base		

YOUR COLOR MEASUREMENT EXPERT

Accurate measurement; Outstanding performance and powerful functionality.

ST-700d Spectrophotometer

The portable spectrophotometer ST-700d is designed to accurately and quickly capture the surface color of objects. No matter how complex the lighting conditions are, it can precisely lock onto and reproduce the true color of the object's surface, providing you with an efficient and convenient color management experience.



Multi caliber switching



Camera locating



Dual optical path system



Mobile APP

ST-700d is equipped with nine apertures: 3 mm platform + 3 mm pointed + 5 mm platform + 5 mm pointed + 10 mm platform + 10 mm pointed + 11 mm platform + 11 mm pointed + 1×3 mm.

ST-700d Plus is equipped with thirteen apertures: 3 mm platform + 3 mm pointed + 5 mm platform + 5 mm pointed + 6 mm platform + 6 mm pointed + 10 mm platform + 10 mm pointed + 11 mm platform + 11 mm pointed + 12 mm platform + 12 mm pointed + 1×3 mm.

Pointed Aperture



Platform Aperture



Rich Chromaticity Indicators

In addition to the measurement of common color indicators, it also provides spectral reflectance, whiteness (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube, Berger, Stensby), yellowness (ASTM D1925, ASTM E313-00, ASTM E313-73), metamerism index (Mt), colorfastness to transfer, colorfastness to light, strength (dye strength, coloring power), opacity, 8-degree gloss, 555 hue classification, blackness (My, dM), color density CMYK (A, T, E, M), Tint (ASTM E313-00), Munsell, and other diversified chromaticity indicators to meet the needs of a wide range of industries.



Non-contact Automatic Calibration

The instrument is equipped with an intelligent calibration base that allows for simultaneous calibration and charging. Coupled with the non-contact automatic whiteboard calibration system, it ensures that each measurement achieves laboratory-level precision, guaranteeing the accuracy of the measurement results.

Powerful Display and Interaction Capabilities

The device is equipped with a 3.5-inch true-color capacitive touch screen, which can display a variety of chromaticity indicators such as spectral charts, color difference values/graphs, color simulation, and color bias. It also enables rapid and precise color analysis and judgment.



Dual Measurement Modes

The device includes both SCI (Specular Component Included) and SCE (Specular Component Excluded) measurement modes, and can display the results of both modes simultaneously on the LCD screen.

APPLICATION FIELDS

The ST-700d Array Spectrophotometer has a broader adaptability, with accurate color measurement and stable performance. It is widely used in various industries such as plastics and electronics, paints and coatings, textiles and dyeing, printing and paper products, automotive, medical, cosmetics, and food, as well as in research institutions and laboratory fields.



Cosmetics



Plastics



Paints and Coatings



Printed Paper Products



Fabrics

SPECIFICATION PARAMETER

Model	ST-700d Plus	ST-700d
Optical Geometry	D/8(diffused illumination, 8-degree viewing angle) SCI & SCE; Include UV/Exclude UV	
Compliance Standards	CIE No.15, GB/T3978, GB 2893, GB/T 18833, ISO7724 - 1, ASTM E1164, DIN5033 Teil7	
Integrating Sphere Size	Φ40 mm	
Light Source	Combined full spectrum LED light source, UV light source	
Spectrophotometric Mode	Flat Grating	
Silicon photodiode array	Double row 40 groups	
Wavelength Range	360 ~ 780 nm	400 ~ 700 nm
Wavelength Interval	10 nm	
Measured Reflectance Range	0 ~ 200%	
Measuring Aperture	Five apertures: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm; LAV: 1 x 3 mm	Three apertures: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm; LAV: 1 x 3 mm
Locating Method	Camera Locating, stabilizer cross position	
Calibration	Non contact automatic whiteboard calibration	
Specular Component	SCI/SCE	
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, HunterLab, βxy, DIN Lab99, Munsell(C/2)	
Color difference formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , $DIN\Delta E99$, $\Delta E(Hunter)$	
Measurement Indicators	Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter, TaubeBergerStensby), YI (ASTM D1925, ASTM 313), Metamerism Index Mt, Color fastness, color fastness, strength (dye strength, tinting strength), opacity 8 degrees glossiness, 555 hue classification, blackness (My, dM), color density CMYK (A, T, E, M), Tint, color density, Munsell (some functions are realized by the PC software)	
Observer Angle	2°/10°	
Illuminant	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TL84), F12 (TL83/U30), B, U35, NBF, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2, LED-C2, LED-C3, LED-C5, customizable light source (41 kinds of light sources in total, some of which are realized by the PC software/APP)	
Displayed Data	Samples Chromaticity Values, Color Difference, Values/Graph, PASS/FAIL Result, Color Simulation, Color Offset	
Measuring Time	About 1.5s	
Repeatability	Chromaticity value: MAV/SCI, within ΔE^*ab 0.02	Chromaticity value: MAV/SCI, within ΔE^*ab 0.022
	(After warm-up correction, measure the average value of the white board 30 times at an interval of 5s)	
	Spectral reflectance: MAV/SCI, standard deviation within 0.07%	
Inter-instrument Error	MAV/SCI, Within ΔE^*ab 0.18 (Average for 12 BCRA Series II color tiles)	MAV/SCI, Within ΔE^*ab 0.2
Display accuracy	0.01	
Measurement Mode	Single measurement, Average measurement (2 ~ 99 times)	
Data storage	APP Massive Storage	
Accuracy assurance	Ensure that the first level measurement is qualified	
Size	L * W * H = 114 x 70 x 208 mm	
Weight	Approximately 435 g (excluding correction seat)	
Battery	Lithium battery, 3.7 V, 5000 mAh, 8500 times within 8 hours	
Illuminant Life Span	More than 1.5 million measurements in 10 years	
Screen	3.5-inch TFT color LCD, Capacitive Touch Screen	
Interface	USB, Bluetooth®	
Data storage	Standard: 500 Pcs; Sample: 20,000 Pcs. (one data can include SCI/SCE at the same time), APP/PC mass storage	
Software support	Android, IOS, Windows, WeChat applet, HarmonyOS	
Language	Simplified Chinese, English, Traditional Chinese	
Standard Accessory	Power adapter, data cable, manual, quality management software (downloaded from the official website), calibration box, protective cover, wrist strap, measurement calibrator	
Optional Accessories	Micro printer, powder test box	

FOR TRAFFIC SIGNS ONLY

One-click measurement of traffic signs, markings, retroreflective Film luminance factor, and chromaticity coordinates.



YS4580 Spectrophotometer

The YS4580 Traffic Sign Dedicated Spectrophotometer adopts a 45/0 (45-degree ring illumination, 0-degree reception) geometric optical structure in accordance with CIE No.15. It uses a concave grating for spectral separation and can accurately measure the reflectance and various colorimetric data of samples. Equipped with a large 20 mm measurement aperture, it is designed for traffic signs, color matching, and color transfer. The instrument includes built-in GB 2893 and GB/T 18833 standard colors and allows for manual definition of polygonal and rectangular tolerance areas. It can achieve one-click measurement of luminance factor and chromaticity coordinates of traffic signs, markings, and retroreflective films. For non-uniform samples with stripes or granular samples, the instrument offers high accuracy and stability.



- Traffic Signs
- Luminance Factor
- Retroreflective Films
- Fluorescent Sample
- Chromaticity Coordinates of Markings



SPECIFICATION PARAMETER

Model	YS4580 (Advanced Edition)	YS4560 (Enhanced Edition)	YS4510 (Standard Edition)
Color	Gray & light yellow	Purple & light yellow	Purple & light yellow
Lighting Method	45/0 (45 ring-shaped illumination, vertical viewing)		
Integrating Sphere Size	Φ48 mm		
Compliance Standards	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724 - 1, ASTM E1164, DIN5033 Teil7		
Lighting Source	Combined LED Light Source, UV Light Source		
Spectral Separation Method	Concave Grating Spectral Separation		
Sensor	256 - pixel Dual - array CMOS Image Sensor		
Wavelength Range	400 - 700 nm		
Wavelength Interval	10 nm		
Bandwidth	10 nm		
Reflectance Range	0 - 200%		
Measuring Aperture	Φ20 mm	Dual Aperture: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm	Custom Single Aperture: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm; SSAV: Φ2 mm/Φ3 mm
Measurement Method	Single Measurement, Average Measurement (2 - 99 times)		
Color Spaces	CIELAB, XYZ, Yxy, LCh, CIELUV, s - RGB, HunterLab, βxy, DINLab99 Munsell (C/2)		
Color Difference Formulas	ΔEab, ΔEuv, ΔE94, ΔEcmc(2:1), ΔEcmc(1:1), ΔE00, DINΔE99, ΔE (Hunter)		
Other Colorimetric Data	Spectral reflectance, whiteness (ASTM E313 - 00, ASTM E313 - 73, CIE/ISO, AATCC, Hunter, Taube, Berger, Stensby), yellowness (ASTM D1925, ASTM E313 - 00, ASTM E313 - 73), metamerism index Mt, color - fastness to staining, color - fastness to change, strength (dye strength, coloring power), hiding power, 555 hue classification, blackness (My, dM), color density CMYK, Tint (ASTM E313 - 00), color density, Munsell (some functions achievable via host computer)		
Observer Angle	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, TL83, TL84, TPL5, U30, B, U35, NBF, Id50, ID65, LED - B1, LED - B2, LED - B3, LED - B4, LED - B5, LED - BH1, LED - RGB1, LED - V1, LED - V2, LED - C2, LED - C3, LED - C5 (a total of 41 light sources, some achievable via host computer)		
Displayed Data	Spectral plots/data, sample colorimetric values, color difference values/plots, pass/fail results, color tendency		
Measuring Time	Approximately 1.5 s		
Repeatability	Spectral reflectance: Standard deviation within 0.1% Colorimetric value: ΔE*ab within 0.04	Spectral reflectance: Standard deviation within 0.08% Colorimetric value: ΔE*ab within 0.03	Spectral reflectance: Standard deviation within 0.1% Colorimetric value: ΔE*ab within 0.05
Inter-instrument Error	MAV, ΔE*ab within 0.2	MAV, ΔE*ab within 0.15	MAV, ΔE*ab within 0.2
	(average value measured with BCRA Series II 12 color plates)		
Size	L * W * H = 184 × 77 × 105 mm		
Weight	Approximately 600 g		
Battery	Lithium - ion battery, 3.7V, 3,200 mAh, 5,000 times within 8 hours		
Illuminant Life Span	More than 3 million measurements in 5 years		
Screen	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB, Bluetooth dual-mode		
Data storage	1,000 standard samples, 30,000 test samples		500 standard samples, 20,000 test samples
Software Support	Android, iOS, Windows, WeChat Mini - Program, HarmonyOS		
Language	Simplified Chinese, English, Traditional Chinese, Russian, Italian, German, Portuguese, Spanish, French		
Operating Temperature Range	0 ~ 40°C, 0 - 85% RH (no condensation), altitude: below 2,000 m		
Storage Temperature Range	-20 ~ 50°C, 0 - 85% RH (no condensation)		
Standard Accessory	Power adapter, data cable, built - in lithium battery, instruction manual, software for color tube (downloadable from official website), White and Black Calibration Board, protective cover		
Optional Accessories	Mini printer, powder test kit, multi - function test component, positioning plate		

COLOR MEASUREMENT COMPANION

Accurate Color Measurement, Quality Control



YS3060

Spectrophotometer

The YS3060, YS3020 and YS3010 adopt the D8 geometric optical illumination recommended by the CIE. These spectrophotometers can accurately measure the SCI (Specular Component Included) and SCE (Specular Component Excluded) reflectance data of both ordinary and fluorescent samples. They are capable of precisely measuring and describing various color difference formulas and color indices in multiple color spaces. With these instruments, precise color communication can be easily achieved, and they can also serve as detection devices for color matching systems. This series of instruments is an excellent measurement companion for color difference quality control. Equipped with color management software, the instruments can be connected to a computer to achieve even more functional expansions.



SPECIFICATION PARAMETER

Model	YS3060 (High Precision Spectrophotometer)	YS3020 (Customizable Measurement Aperture)	YS3010 (Economic Spectrophotometer)
Color	Purple & light yellow		
Lighting Method	Reflect: di:8°, de:8° ; UV Included/Excluded	Reflect: di:8°, de:8°	
Compliance Standards	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7		
Integrating Sphere Size	Φ48 mm		
Illuminant	Combined LED sources, UV sources	Combined LED sources	
Spectral Mode	Concave-Grating		
Sensor	256 limage Element Double Arrays CMOS Image Sensor		
Spectral Range	400 ~ 700 nm		
Spectral Reporting	10 nm		
Semi-Bandwidth	10 nm		
Photometric Range	0 ~ 200%		
Measurement Aperture	Two Apertures: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm	Customizable: Φ4 mm/Φ8 mm/1*3 mm Aperture	Single Aperture: MAV: Φ8 mm/Φ10 mm
Measurement Mode	Measure both SCI & SCE together		
Color Spaces	CIELAB, XYZ, Yxy, Lch, CIELUV, s-RGB, HunterLab, Bxy, DINLab99, Munsell (C/2)		
Color Difference Formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , DIN $\Delta E99$, ΔE (Hunter)		
Other Colorimetric Data	Spectral Reflectance, Whiteness (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube-Berger-Stensby), Yellowness (ASTM D1925, ASTM E313-00, ASTM E313-73), Metamerism Index Mt, Stain Fastness, Color Fastness, Strength (Dye Strength, Tinting Strength), Opacity, 8-Degree Gloss, 555 Hue Classification, Blackness (My, dM), Color Density CMYK (A, T, E, M), Tint (ASTM E313-00), Color Density, Munsell (Some functions realized through a host computer).		
Observer	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, TL83, TL84, TPL5, U30, B, U35, NBF, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2, LED-C2, LED-C3, LED-C5 (a total of 41 light sources, some of which are realized through a host computer).		
Displayed Data	Spectral chart/data, sample colorimetric values, color difference values/chart, pass/fail results, color bias		
Measurement Time	Approximately 1.0 seconds (for simultaneous measurement of SCI/SCE, approximately 2.6 seconds).		
Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.08% (400 ~ 700 nm: within 0.18%)	Spectral reflectance: MAV/SCI, Standard deviation within 0.1%(400 ~ 700 nm: within 0.2%)	
Chromaticity value	Standard deviation within ΔE^*ab 0.03	Standard deviation within ΔE^*ab 0.04	Standard deviation within ΔE^*ab 0.05
Inter-instrument agreement	Within ΔE^*ab 0.15 (MAV/SCI) (Average for 12 BCRA Series II color tiles)	Within ΔE^*ab 0.2	
Measurement Mode	Single Measurement, Average Measurement (2 ~ 99 times)		
Locate Mode	Display Camera Locating		
Size	L * W * H = 184 * 77 * 105 mm		
Weight	Approx.600 g		
Battery Performance	Li-ion battery, 5,000 measurements within 8 hours		
Life Lamp	5 years, more than 3 million measurements		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB, Bluetooth		
Data Storage	As Standard - 1,000, As Sample - 28,000 (SCI&SCE can be included in one data)	As Standard - 1,000, As Sample - 20,000 (SCI&SCE can be included in one data)	
Languages	Simplified Chinese, Traditional Chinese, English, French, Portuguese, Russian, Spanish, Italian, German		
Software Support	Android, iOS, Windows, WeChat Mini - Program, HarmonyOS		
Operating Environment	0 ~ 40°C, 0 ~ 85% RH (noncondensing), Altitude: < 2,000 m		
Storage Environment	-20 ~ 50°C, 0 ~ 85% RH (noncondensing), Altitude: < 2,000 m		
Standard Accessories	Power adapter, data cable, built - in lithium - ion battery, instruction manual, SQCX quality management software (downloadable from official website), White and Black Calibration Board, protective cover		
Optional Accessories	Mini printer, powder test kit, multi - function test component		



High-Precision

The ST70 Spectrophotometer ensures high repeatability with a ΔE ab value easily controlled within 0.02, and inter-instrument difference with a ΔE ab value controlled within 0.15, guaranteeing accurate measurements.



Adaptability

It can perform measurements under different lighting conditions and environments, demonstrating strong adaptability and the ability to meet color measurement needs in various complex conditions.



Fast Measurement

The measurement speed is extremely fast, allowing multiple samples to be measured in a short period of time. This increases production efficiency and enhances product quality.



Multi-functionality

Not only can it measure multiple colorimetric indicators, but it also supports connections with various devices across different platforms, enabling more functional expansions

MASTER THE COLOR STANDARD WITH JUST ONE HAND

Measure, analyze colors, and manage data storage—all in one device.



ST70 Spectrophotometer

The ST70 Handheld Spectrophotometer is designed to accurately and swiftly capture the surface color of objects. It can precisely identify and reproduce the true color of the object's surface, no matter how complex the lighting conditions are, providing you with an efficient and convenient color management experience. It is not only an expert in color measurement but also a reliable partner in the world of color. Whether it is used for quality monitoring, color data management, or in various application scenarios, it can offer outstanding performance and precise measurement results.



In addition to providing common color measurement indicators, the ST70 Spectrophotometer also offers the following colorimetric indicators: spectral reflectance, Whiteness Index (according to ASTM E313, CIE/ISO, AATCC, Hunter, Taube - Berger -Stensby), Yellowness Index (according to ASTM D1925, ASTM E313), metamerism index (Mt), staining fastness, colorfastness to light, strength (dye strength, tinting strength), hiding power, 8° gloss, 555 hue classification, blackness (My, dM), CMYK (A, T, E, M), tint, color density, and Munsell (some functions are realized through a host computer).

CAN BE CONNECTED TO MOBILE AND PC SOFTWARE FOR MEASUREMENT.

- Supports Android, iOS, Windows, WeChat Mini Programs, and HarmonyOS.
- Enable more functional extensions.



The instrument can connect to mobile apps and WeChat Mini Programs via Bluetooth to achieve the following:

- Measure color differences and provide more intuitive color simulations.
- Find the closest matching colors and view detailed information such as Lab values and spectra.
- Create a personal color database to store color card information for industries like printing, coatings, and textiles, with the capacity for massive storage.



The instrument can achieve the following through the computer-based color management software-SQCX:

- Control the instrument for measurement, change the instrument configuration, and operate the instrument data.
- It enables complex data management, color detection, and report generation, serving as a powerful assistant for color quality management.
- Measurement data reports can be uploaded to cloud storage, enabling massive data storage.

SPECIFICATION PARAMETER

Model	ST70	ST60	ST50
Optical Geometry	Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI&SCE; Include UV/Exclude UV		Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI&SCE; Exclude UV
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7		
Integrating Sphere Size	Φ40 mm		
Light Source	Combined full spectrum LED light source, UV light source		Combined full spectrum LED light source
Spectroscopic Method	Flat Grating		
Silicon photodiode array	double row 32 groups	double row 26 groups	double row 20 groups
Spectral Range	360 ~ 780 nm	360 ~ 700 nm	400 ~ 700 nm
Wavelength Pitch	10 nm		
Photometric Range	0 ~ 200%		
Measurement Aperture	Five apertures: MAV: Φ8 mm / Φ10 mm; SAV: Φ4 mm / Φ5 mm; LAV: 1 x 3 mm	Four apertures: MAV: Φ8 mm / Φ10 mm; SAV: Φ4 mm / Φ5 mm	Two apertures (optional 8 mm or 4 mm)
Specular Component	SCI&SCE		
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, HunterLab, βxy, DIN Lab99, Munsell (C/2)		CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, βxy, Munsell (C/2)
Color difference formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , ΔE^*cmc (2:1), ΔE^*cmc (1:1), ΔE^*00 , DIN $\Delta E99$, ΔE (Hunter)		ΔE^*ab , ΔE^*uv , ΔE^*94 , ΔE^*cmc (2:1), ΔE^*cmc (1:1), ΔE^*00
Other Colorimetric Index	Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter, Taube Berger Stensby), YI (ASTM D1925, ASTM 313), Metamerism Index Mt, Color fastness, color fastness, strength (dye strength, tinting strength), opacity 8 degrees glossiness, 555 hue classification, blackness (My, dM), color density CMYK (A, T, E, M), Tint, color density, Munsell (some functions are realized by the PC software)		
Observer Angle	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30), B, U35, NBF, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2, LED-C2, LED-C3, LED-C5, customizable light source (41 kinds of light sources in total, some of which are realized by the PC software/APP)		
Displayed Data	Spectrogram/Data, Sample Colorimetric Value, Color Difference Value/Graph, Pass/Fail Results, Color Simulation, Color Bias		
Measurement Time	About 1.5 s		
Repeatability	Chromaticity value: MAV/SCI, within ΔE^*ab 0.02	Chromaticity value: MAV/SCI, within ΔE^*ab 0.025	Chromaticity value: MAV/SCI, within ΔE^*ab 0.03
	(After warm-up correction, measure the average value of the white board 30 times at an interval of 5s)		
	Spectral reflectance: MAV/SCI, standard deviation within 0.08% (400 ~ 700 nm: within 0.18%)		Spectral reflectance: MAV/SCI, standard deviation within 0.1% (400 ~ 700 nm: within 0.2%)
Inter-instrument agreement	MAV/SCI, Within ΔE^*ab 0.15 (Average for 12 BCRA Series II color tiles)		MAV/SCI, Within ΔE^*ab 0.2
Display accuracy	0.01		
Measurement Mode	Single measurement, Average measurement (2 ~ 99 times)		
Locating Method	Camera Locating, stabilizer cross position		
Dimension & Weight	L * W * H = 129 x 76 x 217 mm, Appro x 600 g		
Battery	Lithium battery, 3.7 V, 5,000 mAh, 8800 times within 8 hours		
Life Lamp	More than 1.5 million measurements in 10 years		
Screen	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB, Bluetooth		
Data storage	Standard: 1,000 Pcs; Sample: 30,000 Pcs. (one data can include SCI/SCE at the same time), APP/PC mass storage		Standard: 1,000 Pcs; Sample: 20,000 Pcs. (one data can include SCI/SCE at the same time), APP/PC mass storage
Software support	Android, IOS, Windows, WeChat applet, HarmonyOS		
Languages	Simplified Chinese, English, Traditional Chinese		
Standard Accessories	Power adapter, data cable, user manual, quality management software (downloadable from the official website), white and black calibration cap, protective cover, wrist strap, Φ8 mm flat aperture, Φ8 mm conical aperture, Φ4 mm flat aperture, Φ4 mm conical aperture, Φ1x3 conical aperture.	Power adapter, data cable, user manual, quality management software (downloadable from the official website), white and black calibration cap, protective cover, wrist strap, Φ8 mm flat aperture, Φ8 mm conical aperture, Φ4 mm flat aperture, Φ4 mm conical aperture	Power adapter, data cable, user manual, quality management software (downloadable from the official website), white and black calibration cap, protective cover, wrist strap, measurement aperture (optional 8,mm or 4,mm)

FOCUS ON COLOR MEASUREMENT WITH CORE TECHNOLOGIES.

Ensure that the color of every product
meets the standard.

PS2080 Spectrophotometer

The PS2080 “Pangniu” spectrophotometer is developed by 3nh using CMOS dual channel spectrophotometer sensors. It is both a spectrophotometer and a spectrophotometer, with excellent repeatability and inter station difference. The measurement data is continuously stable, accurate and reliable, and with a comfortable and round appearance, it is even more adorable. It comes with quality management software that supports Android, IOS, Windows, HarmonyOS system, WeChat mini program, color cloud, and more. This enables convenient quality monitoring and data management.



- Adopting internationally recognized D/8 SCI/SCE synthesis technology.
- Adopting full band balanced LED light source+UV light source.
- High speed and high sensitivity CMOS dual channel spectroscopic sensor.
- Non contact automatic whiteboard calibration.
- Multiple color measurement spaces and observation light sources.
- Ergonomic design and easy to measure devices.
- Cloud storage, portable massive color database.
- Each spectrophotometer undergoes a metrological verification report.
- Camera positioning for clear observation of the measured area.
- Quality management software supports Android, IOS, Windows, HarmonyOS system, WeChat mini program, color cloud, etc.

SPECIFICATION PARAMETER

Model	PS2010&PS2020	PS2030&PS2040	PS2050&PS2060	PS2070&PS2080
Optical Geometry	Reflectance: D/8(Diffuse illumination, 8° acceptance) SCI&SCE;			
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, IS07724-1, ASTM E1164, DIN5033 Teil7			
Integrating Sphere Size	Φ40 mm			
Light Source	Combined full spectrum LED light source		Combined full spectrum LED light source, UV light source	
Sensor	CMOS dual path splitting sensor			
Wavelength Range	400 ~ 700 nm			
Measuring Aperture	PS2010 single aperture: Φ8 mm/Φ10 mm (platform measurement aperture)	PS2030 two aperture: MAV: Φ8 mm/Φ10 mm (platform + pointed measuring aperture)	Ps2050 dual aperture: MAV: Φ8 mm/Φ10 mm (platform measurement aperture); SAV: Φ4 mm/Φ 5mm (platform measurement aperture);	PS2070 four aperture: MAV: Φ8 mm/Φ10 mm (platform + pointed measuring aperture); SAV: Φ4 mm/Φ5 mm (platform + pointed measuring aperture)
	PS2020 single aperture: Φ4 mm/Φ5 mm (platform measurement aperture)	PS2040 two aperture: SAV: Φ4 mm/Φ5 mm (platform + pointed measuring aperture)	PS2060 three aperture: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm; SSAV: 1 x 3 mm;	PS2080 six aperture: MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm; SSAV: 1 x 3 mm; (platform + pointed measuring aperture)
Specular Component	SCI/SCE			
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, HunterLab, βxy, DIN Lab99			
Color Difference Formulas	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00, DINΔE99, ΔE (Hunter)			
Other Colorimetric Index	Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), metamerism index Mt, color fastness to staining, color fastness to color change, strength, coverage, 555 tone classification, Munsell (C/2) (implemented by mobile app)			
Observer Angle	2°/10°			
Illuminant	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5),F11 (TL84), F12 (TL83 / U30), U35, NBF, ID50, ID65			
Displayed Data	Spectrogram/Data, Sample Colorimetric Value, Color Difference Value/Graph, Pass/Fail Results, Color Simulation, Color Bias			
Measuring Time	About 1 s			
Repeatability	Chromaticity value: MAV/SCI, within ΔE*ab 0.04	Chromaticity value: MAV/SCI, within ΔE*ab 0.035	Chromaticity value: MAV/SCI, within ΔE*ab 0.03	Chromaticity value: MAV/SCI, within ΔE*ab 0.02
	Spectral reflectance: MAV/SCI, standard deviation within 0.1% (400 - 700 nm: 0.2%)		Spectral reflectance: MAV/SCI, standard deviation within 0.08% (400 - 700 nm: 0.18%)	
	(After preheating and correction, measure the average value of the whiteboard 30 times at an interval of 5 seconds)			
Inter-instrument Error	MAV/SCI, Within ΔE*ab 0.4	MAV/SCI, Within ΔE*ab 0.35	MAV/SCI, Within ΔE*ab 0.3	MAV/SCI, Within ΔE*ab 0.2
	(Average for 12 BCRA Series II color tiles)			
Display Accuracy	0.01			
Measured Reflectance Range	0 - 200%			
Reflectivity Resolution	0.01%			
Measurement Mode	Single measurement, Average measurement (2 ~ 99 times)			
Locating Method	Stabilizer position		Camera Locating, Stabilizer position	
Whiteboard Verification Method	Contact type calibration			Non contact automatic whiteboard calibration
Size	L * W * H = 94 x 68 x 188 mm			
Weight	Approximately 270 g (excluding correction seat)			
Battery	Lithium battery, 3.7 V, 3200 mAh, 8000 times within 8 hours			
Illuminant Life Span	More than 1.2 million measurements in 10 years			
Screen	2.8-inch TFT color LCD, Capacitive Touch Screen			
Interface	USB		USB, Bluetooth®	
Data Storage	Standard: 500 Pcs; Sample: 5,000 Pcs		Standard: 500 Pcs; Sample: 10,000 Pcs	
	(one data can include SCI/SCE at the same time), APP/PC mass storage			
Software Support	Windows		Android, IOS, Windows, WeChat applet, HarmonyOS	
Languages	Simplified Chinese, English, Traditional Chinese			
Standard Accessories	Power adapter, data cable, manual, quality management software (downloaded from the official website), black and white correction box, protective cover, wrist strap, measurement caliber			
Optional Accessories	Micro printer, powder test box			



**CHOOSE A SPECTROPHOTOMETER,
AND MAKE COLOR ERRORS NOWHERE TO HIDE.**

TS7036 Spectrophotometer

The TS7036 is a portable spectrophotometric colorimeter developed by 3nh using its proprietary core spectrophotometric technology. It is a high-end colorimeter based on the spectrophotometric architecture. In addition to ensuring the accuracy of the relative value ΔE , it also guarantees the long-term accuracy of the absolute values L, A, and B. It can pass the metrological requirements of both international and national standards anytime and anywhere.



PRODUCT FEATURES

- Adopt internationally commonly used d/8 SCI/SCE Synthesis technology;
- Adopt full waveband balanced LED light source;
- Silicon photodiode array sensor (32 groups with double rows);
- A variety of color space, a variety of observation light sources;
- Ergonomic design and easy measuring device;
- Pass the Calibration Certificate;
- ETC real-time calibration technology;
- Camera locating can clearly observe the measured area;
- Color management software.



The TS7036 spectrophotometer, with its high precision and stability, provides reliable color assurance for your production process. It can complete measurements in an extremely short time, and the measurement results are highly consistent, unaffected by ambient light and the surface condition of the sample.



Fabric Measurement



Fabric Measurement



Plastic Measurement



Metal Measurement

SPECIFICATION PARAMETER

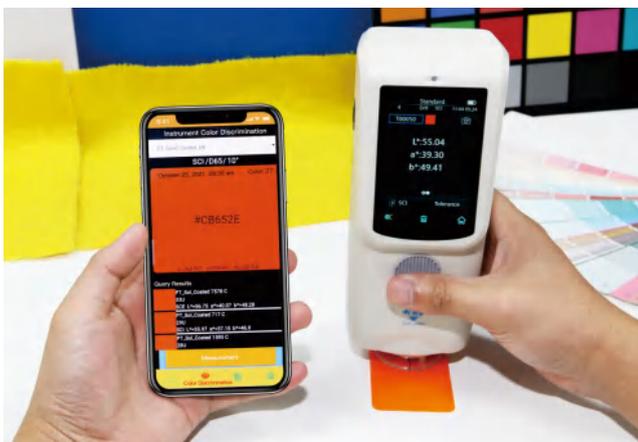
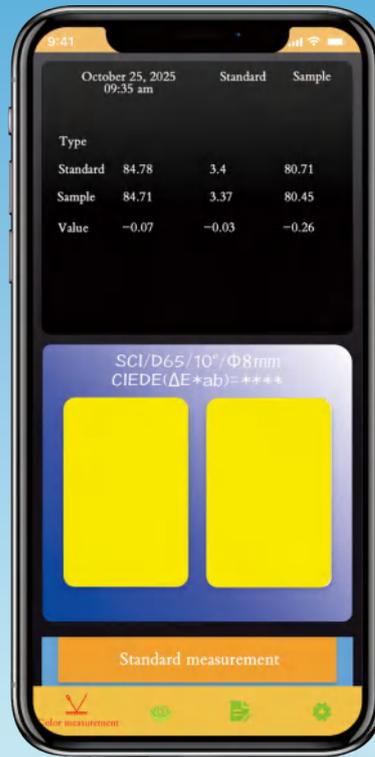
Model	TS7036	TS7030	TS7020	TS7010
Optical Geometry	D/8° (Diffuse illumination, 8° direction reception)			
Standards compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7			
Integrating Sphere Size	Φ40 mm			
Light Source Device	Combined LED Lamp, UV Lamp	Combined LED Lamp		
Spectroscopic Method	Flat grating			
Sensor	Silicon photodiode array (dualrow 32 groups)		Silicon photodiode array (dualrow 24 groups)	
Light wave range	400 ~ 700 nm			
Wavelength Pitch	10 nm			
Semiband Width	10 nm			
Measured Reflectance Range	L: 0 ~ 120; reflectivity: 0 ~ 200%		L: 0 ~ 100 Reflectance: Can test the reflectance at 3 specific wavelengths specified by the user (default: 440 nm, 550 nm, 600 nm)	L: 0 ~ 100 Reflectance: Can test the reflectance at 1 specific wavelengths specified by the user (default: 550 nm)
Measuring Aperture	Dual Apertures MAV: Φ8 mm/Φ10 mm; SAV: Φ4 mm/Φ5 mm		Single Apertures Φ8 mm/Φ10 mm	
Specular Component	SCI/SCE		SCI	
Color Space	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, βxy, DIN Lab9, DIN Lab99 Munsell (C/2)	CIE LAB, XYZ, Yxy, Lch, s-RGB, βxy, Munsell(C/2)	CIE LAB, XYZ, Yxy, LCh	
Color Difference Formula	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1), ΔE*00, DINΔE99	ΔE*ab, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1), ΔE*00, DINΔE99	ΔE*ab, ΔE*00	
Other Colorimetric Index	WI(ASTM E313, CIE/ISO, AATCC,Hunter), YI(ASTM D1925, ASTM 313), Metamerism Index MI, Staining Fastness, Color Fastness, Color Strength, Opacity, Color Card Search		/	
Observer Angle	2°/10°		10°	
Illuminant	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12 (TL83/U30)	D65, A, C, D50, F2 (CWF), F7(DLF), F10(TPL5), F11(TL84), F12 (TL83/U30)	D65, A, F2(CWF)	
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Simulation, Color Offset		Reflectance (reflectance at 3 specific wavelengths specified by the user)	Reflectance (reflectance at 1 specific wavelengths specified by the user)
			sample colorimetric values, color difference values/diagrams, pass/fail results, color simulation, color deviation	
Displayed Accuracy	0.01		Display: 0.1, Storage: 0.01	
Measuring Time	About 1.5 s (Measure SCI&SCE about 3.2s)		About 1.5s	
Repeatability	Chromaticity value: MAV/SCI, within ΔE*ab 0.05	Chromaticity value: MAV/SCI, within ΔE*ab 0.06	Chromaticity value: MAV/SCI, within ΔE*ab 0.08	Chromaticity value: MAV/SCI, within ΔE*ab 0.1
	(When a white calibration plate is measured 30 times at 5 second intervals after white calibration)			
Inter-instrument Error	MAV/SCI, Within ΔE*ab 0.3 (Average for 12 BCRA Series II color tiles)		MAV/SCI, Within ΔE*ab 0.4 (Average for 12 BCRA Series II color tiles)	
Measurement Mode	Single Measurement, Average Measurement (2 - 99 times)			
Locating Method	Camera Locating, stabilizer cross position		Stabilizer cross position	
Dimension	L * W * H = 81 x 71 x 214 mm			
Weight	About 460 g			
Battery	Li-ion battery, 6,000 measurements within 8 hours			
Illuminant Life Span	5 years, more than 3 million times measurements			
Display	3.5-inch TFT color LCD, Capacitive Touch Screen			
Data Port	USB, Bluetooth	USB		USB charging, software connection is not supported
Data Storage	Standard 1,000 Pcs, Sample 30,000 Pcs (One data is able to include SCI/SCE)	Standard 1,000 Pcs, Sample 20,000 Pcs	Standard 500 Pcs, Sample 1,000 Pcs	
Language	Simplified Chinese, English, Traditional Chinese			
Operating Environment	0 ~ 40°C, 0 ~ 85% RH (no condensing), Altitude < 2000 m			
Storage Environment	-20 ~ 50°C, 0 ~ 85% RH (no condensing)			
Standard Accessory	Power Adapter, USB Cable, User Guide, PC Software(Download from office website), White and Black Calibration Cavity, Protective Cover, Wrist strap		Power Adapter, USB Cable, User Guide, White and Black, Calibration Cavity, Protective Cover, Wrist strap, 8mm flat aperture	
	8 mm flat aperture, 8 mm tip aperture, 4 mm flat aperture, 4 mm tip aperture		8 mm flat aperture	
Optional Accessory	USB Micro Printer, Powder Test Box, Bluetooth Micro Printer, placement base		USB Micro Printer, Powder Test Box, Bluetooth Micro Printer	

MULTI-DEVICE COLOR SYNC SYSTEM

Full PC/Mobile compatibility with secure cloud synchronization

CR9 Spectrophotometer

As the supply chain network is continuously constructed and improved, data needs to be shared among more production sites. Repeatability and inter-instrument variability have become the main indicators for measuring the performance of colorimeters. The inter-instrument variability of CR9 (MAV/SCI, ΔE^*ab) is within 0.3 (average value measured by 11 - 12 color plates of the BCRA series), which has significant advantages compared with the spectrophotometers on the market. In addition, the repeatability reaches ΔE^*ab 0.03. Its outstanding performance promotes the digital management of color data, thus helping manufacturers strengthen quality management between their factories and suppliers.



- Multiple color measurement spaces and observation light sources; meeting special measurement needs under different measurement conditions.
- Can be used standalone or connected to mobile phones and PC software for measurement; enabling more functions.
- Use the App to establish a private color database in the cloud, allowing data retrieval, analysis and comparison, color query, and color search.
- Supports Android, iOS, Windows, WeChat Mini Program, and HarmonyOS.



Windows



iOS



Android



WeChat Program



HarmonyOS

Color code matching, easy to do

1. The intelligent algorithm automatically matches the closest color card number the moment the sample is measured.
2. The color card number matching accuracy is over 90%.
3. Comes pre-installed with 8 commonly used color cards.



Can be connected to mobile and PC software for measurement.

The CR9 spectrophotometer connects to mobile phones or computers, enabling mobile and cloud-based color data management and sharing for quality control and color data management across various industries.



The instrument can achieve the following through the computer-based color management software-SQCX:

- Control the instrument for measurement, change the instrument configuration, and operate the instrument data.
- It enables complex data management, color detection, and report generation, serving as a powerful assistant for color quality management.
- Measurement data reports can be uploaded to cloud storage, enabling massive data storage.



Connecting to the mobile app “MOBCCS” and WeChat Mini Program “Color Matching Cloud” enables additional instrument functionalities.

- Measure color differences and provide more intuitive color simulations.
- Find the closest matching colors and view detailed information such as Lab values and spectra.
- Create a personal color database to store color card information for industries like printing, coatings, and textiles, with the capacity for massive storage.



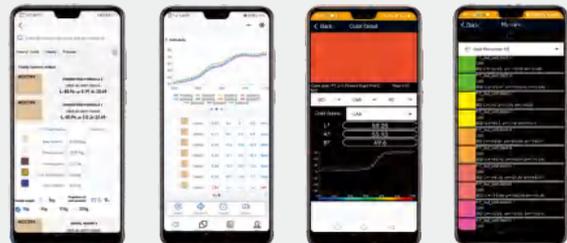
Scan the QR code of the “Color Matching Cloud” mini-program via WeChat.



Download QR Code for MOBCCS iPhone App



Download QR Code for MOBCCS Android App



SPECIFICATION PARAMETER

Model	CR9 (Advanced Version)	CR8 (Professional Version)	CR7 (Basic Version)
Lighting Method	D/8 (Diffuse Lighting, 8° Directional Reception) SCI/SCE Measurement		D/8 (Diffuse Lighting, 8° Directional Reception) SCI Measurement
Compliance Standards	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724 - 1, ASTM E1164, DIN5033 Teil7		
Integrating Sphere Size	Φ40 mm		
Illuminant	Combined Full - Spectrum LED Light Source, UV Light Source	Combined Full - Spectrum LED Light Source	
Spectral Mode	Plane Grating Spectral Separation		
Sensor	Silicon Photodiode Array (Dual Row 32 Groups)		Silicon Photodiode Array (Dual Row 24 Groups)
Wavelength Range	400 ~ 700 nm		
Spectral Reporting	10 nm		
Semi-bandwidth	10 nm		
Photometric Range	L: 0 - 120 Reflectance: 0 - 200%	L: 0 - 120 Reflectance: The instrument can test the reflectance at 3 specified wavelengths by the user (default 440 nm, 550 nm, 600 nm), APP can display the full - band wavelength	L: 0 - 100 Reflectance: Can test the reflectance at 1 specified wavelength by the user (default 550 nm)
Measurement Aperture	Dual Aperture: Φ8 mm, Φ4 mm	Single Aperture: Φ8 mm(Optional Φ 4mm)	Single Aperture: Φ8 mm
Focusing Method	Focusing Method	Fixed Focus	
Measurement Mode	SCI/SCE		
Color Spaces	CIE LAB, XYZ, Yxy, LCh, CIE LUV, s - RGB, βxy, DIN Lab9, DIN Lab99 Munsell (C/2)	CIE LAB, XYZ, Yxy, Lch	
Color Difference Formulas	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00, DINΔE99	ΔEab, ΔE00	
Other Colorimetric Data	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM E313), Metamerism Index Mt, Staining Fastness, Color Change Fastness, Tint Strength, Coverage, Color Card Search	Various colorimetric indicators achieved through APP	/
Observer	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TI84), F12 (TL83/U30)	D65, A, F2 (CWF)	
Displayed Data	Spectral graph/data, sample colorimetric values, color difference values/graph, pass / fail results, color simulation, color deviation	Reflectance (reflectance at 3 specified wavelengths by the user), sample colorimetric values, color difference values/graph, pass/fail results, color simulation, color deviation	Reflectance (reflectance at 1 specified wavelength by the user),
Displayed Data	0.01		0.1
Measurement Time	Approximately 1.5 s (simultaneously testing SCI/SCE takes about 3.2 s)	Approximately 1.5s	
Repeatability	Colorimetric values: MAV/SCI, ΔE*ab within 0.03 (after pre - heating and calibration, average value of 30 measurements of the white plate at 5s intervals)	Colorimetric values: ΔE*ab within 0.04	Colorimetric values: ΔE*ab within 0.1
Inter - Instrument Difference	MAV/SCI, ΔE*ab within 0.3 (average value of measurements of 12 BCRA Series II plates)	MAV/SCI, ΔE*ab within 0.35	MAV/SCI, ΔE*ab within 0.4
Measurement Mode	Single measurement, average measurement (2 - 99 times)		
Locate Mode	Screen camera framing positioning, stabilizing plate positioning	Stabilizing plate positioning	
Size	L * W * H = 81 x 71 x 214 mm		
Weight	Approximately 460 g		
Battery Capacity	Lithium - ion battery, 6,000 times within 8 hours		
Life Lamp	More than 3 million measurements in 5 years		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB, Bluetooth®		USB charging, software connection is not supported
Data Storage	1,000 standard samples, 30,000 test samples (one data can include SCI/SCE simultaneously), APP massive storage	500 standard samples, 10,000 test samples, APP massive storage	
Languages	Simplified Chinese, English, Traditional Chinese		
Software Support	Android, iOS, Windows, WeChat Mini - Program, HarmonyOS		/
Standard Accessories	Power adapter, data cable, instruction manual, white and black calibration board, protective cover, wrist strap,		
	SQCX quality management software (downloadable from the official website), MOBCCS APP (downloadable from the official website)		/
	aperture: Ø8 mm + Ø4 mm platform aperture,	single-aperture: Ø8 mm (optional Ø 4mm) platform aperture,	single - aperture: Ø8 mm platform aperture
Optional Accessories	USB miniature printer, powder test kit, placement base		USB miniature printer, powder test kit, placement base

SMART COLOR MATCHING, DONE IN ONE CLICK.

Colorimeter MAX

Colorimeter Series of ColorMeter

The Colorimeter series by 3nh, known as the “Color Difference Master,” is a sophisticated device that integrates advanced color sensors with a feature-rich app and WeChat mini-program. It is specifically designed with a multifunctional “smart button” and a professional non-contact automatic whiteboard calibration feature. This device serves as both a spectrophotometric colorimeter and a mobile color difference master.

The Colorimeter is compact and portable. When wirelessly connected to a mobile device, it not only performs color measurement and color card recognition but also offers a variety of functional extensions. You can use it anytime and anywhere to capture color inspiration.



The Colorimeter, combined with the “Color Matching Cloud”, can also function as color matching software. It is widely used in the grout color matching industry, including common materials such as epoxy colored sand, color paste, and color powder. It can provide fast and accurate color analysis, formulas, and comprehensive color matching solutions for a variety of applications.



Color Matching or Color Lookup



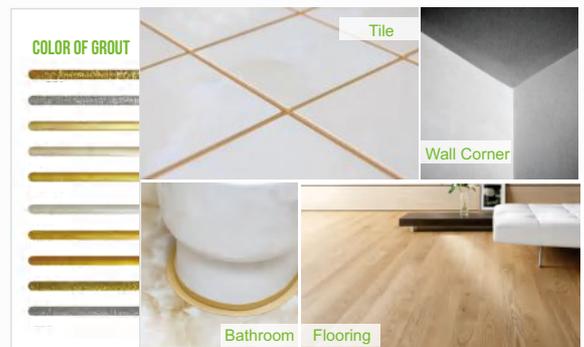
Grout Color Matching



Skin Tone Measurement



Color Difference Correction



SPECIFICATION PARAMETER

Model	Colorimeter MAX (Enhanced edition)	Colorimeter HI (Premium edition)	Colorimeter TOP (Special Edition)
Optical Geometry	D/8 (diffuse illumination, receiving in 8° direction, including specular reflection light SCI)		
Standards Compliant	CIE No.15,GB/T 3978		
Integrating Sphere Size	Φ20 mm		
Light Source Device	Full spectrum LED Lamp		
Spectroscopic Method	Filter splitting		
Sensor	CMOS dual optical path sensor		
Wavelength Range	400 ~ 700 nm		
Wavelength Interval	10 nm		
Measuring Aperture	Φ8 mm		
Specular Component	SCI		
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, s-RGB, HunterLab, βxy, DIN Lab99		
Color Difference Formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , DIN $\Delta E99$, ΔE (Hunter)		
Other Colorimetric Data	Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), metamerism index Mt, color fastness, color fastness, strength, opacity, 555 shades Classification, Munsell (C/2) (Mobile APP implementation)		
Observer	2°/10°		
Illuminant	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TI84), F12 (TI83/U30), U35, NBF, ID50, ID65		
Displayed Data	Sample chromaticity value, color difference value/map, pass/fail result, color simulation, color deviation, reflectance (partially realized through mobile APP)		
Measurement Time	About 1 s		
Inter - Instrument Difference	$\Delta E^*00 < 0.2$ (Measurement average of 12 colored bricks of BCRA II series)		
Measurement Stability	Chromaticity value: within ΔE^*ab 0.05	Chromaticity value: within ΔE^*ab 0.045	Chromaticity value: within ΔE^*ab 0.04
	(average of 30 times of whiteboard measurement at 5 s interval)		
Multifunctional Smart Keys	/	There are multi-function smart buttons (the instrument can set parameters and check the measurement data)	
Whiteboard Check Method	Contact automatic whiteboard verification		Non-contact automatic whiteboard verification (whiteboard protection)
Measurement Requirements	National measurement		
Display Accuracy	0.01		
Size	Ø30 x 100 mm		
Weight	About 88 g		
Battery Power	Lithium battery, fully charged, can test 12,000 times continuously		
Lighting Source Life	More than 3 million measurements in 5 years		
Display	IPS full color screen, 1.14 inch		
Interface	Type C USB; Bluetooth 5.0		
Storing Data	10 standard samples, 100 samples, expandable mass storage through mobile APP		
Software Support	Android, IOS, Windows, WeChat applet, HarmonyOS, color matching cloud		
Language	Simplified Chinese, English		
Operating Environment	Temperature: 0 ~ 40°C; Humidity: 0 ~ 85% (No Condensation), Altitude < 2,000 m		
Storage Environment	Temperature: -20 ~ 50°C; Humidity: 0 ~ 85% (No Condensation)		
Standard Accessories	Data cable, manual, calibration box, SQCX PC quality management software, color matching cloud WeChat applet, MOBCCS APP (download from official website)		
Optional Accessories	Micro Printer, Powder test box		

A GREAT HELPER FOR COLOR MEASUREMENT



Colorimeter Series

(PS300, PS200, PS100)

The PS Series Color Difference Meter is the newly launched "Panda" series color difference meter by 3nh. It features a D/8 optical structure, compact size, and portability. When wirelessly connected to a mobile device, it can not only perform color measurement and color card recognition but also offer a variety of functional expansions. You can use it anytime and anywhere to capture color inspiration.

- Adopting professional whiteboard automatic calibration technology, it ensures high stability.
- Light - weight and portable, can be put in a pocket for on - the - go measurement.
- When used with a mobile APP, it can visually display sample color difference values/diagrams, pass/fail results, etc.
- When used with a mobile APP, it enables quick query of color number information, and the APP continuously updates the built - in color cards.



NS Spectrophotometer Series

(NS800, NS808, NS820, NS810)

The NS spectrophotometer has higher precision and is very sensitive to any color. In addition to accurately measuring the Lab value and dE value, it can also directly display the spectral reflectance curve, realize the color matching function, and accurately calculate various color differences. The true parameters of the meter formula.

- Standard 45/0 geometric optical structure, compliant with relevant CIE, ISO, ASTM, and DIN standards.
- 3.5 - inch large-capacity capacitive touch-screen with a pure - screen design interface, offering a user-friendly operation interface.
- Multiple light source modes, compliant with chromaticity indicators of various standards, meeting diverse color measurement requirements.
- Large - capacity storage space, capable of storing over 10,000 test data records.
- Large integrating sphere for more effective homogenization of light, making the measured data more accurate.



NR Colorimeter Series

(NR60CP, NR110, NR100, NR10QC, NR20XE, NR145)

3nh microcomputer colorimeter is suitable for color detection and control in various occasions. It is an ideal choice for color management in garment factories, chemical factories, printing factories, automobile factories, hardware processing factories, mold factories, paint factories, etc.

- Light and cross dual positioning functions make the measurement easier;
- Using 3nh's original new super optical path and dynamic integration time, which has higher measurement stability and measurement accuracy;
- Ring light design, suitable for materials with polarized light (polarization);
- Equipped with high-end CQCS3 color quality management software, which can be connected to a computer.



NH Colorimeter Series

(Nh310, NH300, NR200)

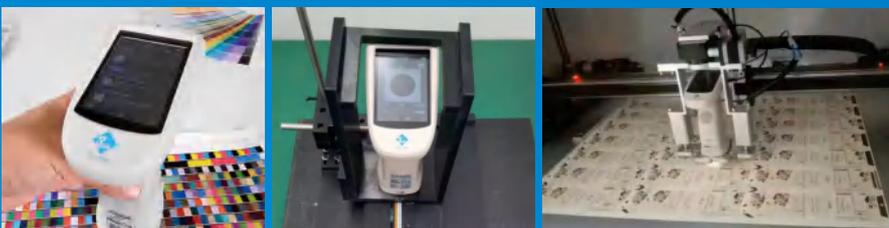
NH series portable computer colorimeter adopts the core multi-channel color sensor of international imported brand, more stable IC platform and efficient and accurate algorithm to provide users with accurate and fast color management and application.

- Humanized design and simplicity of operation, automatic black and white calibration function when power on;
- Stable measurement performance The average fluctuation of ΔE is less than 0.06;
- Flexible and accurate framing and positioning function;
- PC-side software realizes more function expansion, which can perform color difference analysis, color difference accumulation analysis, chromaticity index, color sample library management, simulated object color, etc.

TS7708L

Non-contact Online Spectrophotometer

The TS7708L Online Non-contact Spectrophotometer breaks through the limitations of traditional contact measurement methods. Equipped with advanced non-contact technology, it prevents sample contamination and damage, ensuring precise measurements for liquid, solid, and powder materials alike. This cutting-edge device safeguards your production processes with unmatched accuracy and reliability.



- 1 Online automatic measurement, fast measurement speed, measure and transmit immediately.
- 2 D/8 geometry, supports measurement of fluorescent samples.
- 3 Supports over twenty measurement indicators such as color difference, whiteness, and yellowness.
- 4 Built-in color card system, automatically matches corresponding color card number after color measurement.
- 5 Controlled by computer; suitable for automated production lines.
- 6 Easy installation and convenient use.

Product Model	TS7708L	
Lighting Method	D/8 (diffuse illumination, receiving in 8° direction, including specular reflection light SCI)	
Standards Complied	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724 - 1, ASTM E1164, DIN5033 Teil7	
Integrating Sphere Size	Φ40 mm	
Lighting Source	Combined full - spectrum LED light source, UV light source	
Spectrophotometric Mode	Plane grating spectral splitting	
Sensor	Silicon photodiode array (double row of 40 groups)	
Wavelength Range	400 - 700 nm	
Wavelength Interval	10 nm	
Bandwidth	10 nm	
Reflectance Range	0 - 200%	
Measurement Aperture	Custom single measurement aperture: Φ2 mm or Φ8 mm/Φ10 mm or Φ4 mm/Φ5 mm or 1 x 3 mm; non - contact distance 0.7 mm ± 0.1, parallelism of sample measured surface and measurement aperture surface 0.2 degrees	
Light - containing Method	Simultaneous measurement of SCI/SCE	
Color Space	CIELAB, XYZ, Yxy, LCh, CIE LUV, s - RGB, HunterLab, βxy, DIN Lab99, Munsell (C/2)	
Color Difference Formulas	ΔEab, ΔEuv, ΔE94, ΔEcmc(2:1), ΔEcmc(1:1), ΔE00, DINAIE99, ΔE (Hunter)	
Other Colorimetric Indicators	Spectral reflectance, whiteness (ASTM E13 - 00, ASTM E13 - 73, CIE/ISO, AATCC, Hunter, Taube Berger Stensby), yellowness (ASTM D1925, ASTM E313 - 00, ASTM E313 - 73), color - difference index Mt, color fastness, metamerism index, dyeing strength, hiding power, 8 - degree glossiness, 555 - color classification, blackness (My, dM), color density CMYK, Tint (ASTM E313 - 00), color density, Munsell (some functions can be realized through the host computer)	
Observer Angle	2°/10°	
Observation Light Source	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TL5), F11 (TL84), F12 (TL83/U30)	
Display	Spectral diagram/data, sample colorimetric values, color difference diagram/values, pass/fail results, color fidelity, color deviation	
Measurement Time	Approximately 1.5 s (simultaneous measurement of SCI/SCE, approximately 3.2 s)	
Repeatability	Spectral reflectance: within 0.08% standard deviation for MAV/SCI Colorimetric values: within ΔE*ab 0.08 for MAV/SCI (after pre - heating and calibration, average of 30 measurements of whiteboard at 5s intervals)	
Inter-instrument Error	Within ΔE*ab 0.25 for MAV/SCI (average value of 12 BCRA Series II color tiles measurement)	
Measurement Method	Single measurement, average measurement (2 - 99 times)	
Positioning Method	Screen camera positioning	
Dimensions	L * W * H = 129 × 76 × 217 mm	
Weight	Approximately 600 g	
Battery Capacity	Lithium battery, 3.7 V, 5,000 mAh, can measure 6,000 times within 8 hours	
Lighting Source	Service life of more than 3 million measurements in 5 years	
Display Screen	TFT true color, 3.5 inch, capacitive touch screen	
Interface	USB, Bluetooth®	
Stored Data	Android, iOS, Windows, WeChat Mini - Program, HarmonyOS	
Software Support	Service life of more than 3 million measurements in 5 years	
Language	Simplified Chinese, Traditional Chinese, English, Russian	
Standard Accessories	Power adapter, data cable, instruction manual, quality management software (downloadable from official website), White and Black Calibration Board, protective cover, wrist strap	

NON-CONTACT RAPID MEASUREMENT

YL3160 Non-contact Spectrophotometer

The YL3160 is an industrial-grade non-contact spectrophotometer featuring a 45/0 optical structure, designed for online color measurement without physical contact. It eliminates contamination and sample damage, making it ideal for integration into industrial production lines and robotic arms. Combining non-contact online measurement technology with an intelligent closed-loop control system, it delivers high-precision color monitoring, real-time data feedback, and optimized production processes. This instrument meets the stringent demands of modern manufacturing for efficient, non-destructive, and automated quality control. Product introduction.

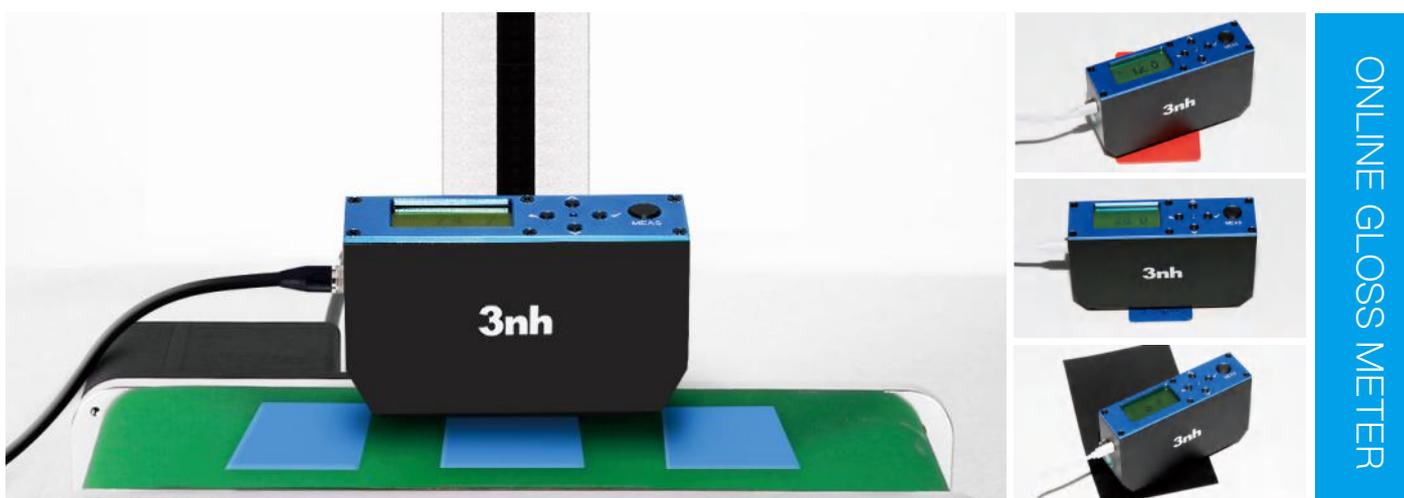


Product Model	YL3120	YL3160
Features	45/0(45 circular uniform illumination 0 reception); Meet the standards of CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO 7724-1, ASTM E 1164, DIN 5033 TEIL 7	
Lighting Source	Full spectrum LED light source	
Spectral Splitting Method	Concave grating	
Sensor	256 - pixel dual - array CMOS image sensor	
Wavelength Range	400 - 700 nm/10 nm output	
Reflectance Range	0 - 200%	
Measurement Aperture	Φ8mm	
Non - Contact Distance	7.5mm(±0.15mm)	
Sample Height	No thickness limit (probe-only measurement)	
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,Musell,s-RGB,HunterLab,βxy,DIN Lab99	
Color Difference Formulas	$\Delta E^*ab, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \Delta E (Hunter), \text{DIN}\Delta E99$	
Other Colorimetric Indicators	Spectral reflectance, WI(ASTM E313, CIE/ISO, AATCC, Hunter, ISO 2470/R457, Taube, Berger, Stensby), Tint(ASTM E313-00), Y1(ASTM D1925, ASTM 313), metamerism index MI, Color fastness, color fastness, strength, coverage, blackness (My,dM), color density CMYK (partly realized by PC software)	
Observer Angle	2°/10°	
Observation Light Source	A,B,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12,CWF,U30,U35,DLF,NBF,TL83,TL84,ID50,ID65,LED-B1,LED-B2,LED-B3,LED-B4,LED-B5,LED-BH1,LED-RGB1,LED-V1,LED-V2	
Display	Spectral diagram/data, sample colorimetric values, color difference values/diagrams, color simulation, pass/fail results, display tolerance can be set	
Measurement Time	Fastest 0.05 sec (typically ~0.1 sec)	
Calibration	Intelligent automatic calibration	
Repeatability	Chromaticity value: ΔE^*ab within 0.03 After the instrument is warmed up and calibrated, measure the average value of the whiteboard 30 times at an interval of 5s)	Chromaticity value: ΔE^*ab within 0.02
Inter-station Difference	Within ΔE^*ab 0.3	Within ΔE^*ab 0.2
Accuracy Assurance	Ensure that the first-level measurement is qualified	
Measurement Mode	Single measurement, average measurement (2~99 times)	
Display	TFT true color 3.5inch	
Dimensions/Weight	100*100*140mm, About 1400g	
Standard Accessory	Power adapter, manual, USB cable, RJ45 network cable, RS485 multi-computer communication cable, RS232 communication cable, standard calibration board, black calibration box	

60° NON-CONTACT MEASUREMENT

YG60L Plus Online Non-contact Gloss Meter

YG60L PLUS Online Gloss Meter is a non-contact surface gloss measurement device that eliminates physical contact, contamination, or sample damage. It supports non-destructive online inspection of liquids, powders, pastes, and fragile materials. The compact probe design allows seamless integration into automated production lines. It is widely used for gloss measurement and quality inspection in industries such as paints & inks, coatings, paper printing, plastics & electronics, furniture, ceramics, electroplating, hardware, marble, and cosmetics. Additionally, it supports RS485 multi-unit connectivity for distributed testing in large-scale production lines.



Product Model	YG60L Plus
Measurement Angle	60°, compliant with standards ISO 2813, ASTM D 523, GB/T 9754
Measurement Spot	60°: 9 x 15 mm
Measurement Range	60°: 0~1000 GU
Resolution	0.1 GU
Non-contact Distance	Non-contact distance 10.0 mm ±0.1; parallelism between sample surface and measurement aperture ≤0.2°
Measurement Modes	Basic Mode, Statistical Mode, Continuous Mode, Quality Control Mode
Measurement Time	0.2 sec / 1 sec
Repeatability	0~100 GU: ±0.5 GU 100~1000 GU: ±0.5% GU (Tested at 10mm calibration jig with 5-sec intervals, ensuring 10 mm distance and parallelism.)
Accuracy	Compliant with JJG 696 requirements for working gloss meters
Auto Shutdown Time	30 sec, 60 sec, 90 sec, 2 min, or Never
Long - Term Calibration	Auto-check for calibration standards, supports manual calibration
Languages	Simplified Chinese, English, Traditional Chinese
Stored Data	35,000 records (15,000 for Basic & Continuous Modes, 10,000 for QC Mode, 10,000 for Statistical Mode)
Display	2.3-inch monochrome display
Dimensions	L * W * H =140×83×38 mm
Weight	Approx. 500 g
Power Supply	Powered via USB adapter or aviation connector
Interfaces	USB, Rs485
PC Software	Quality inspection report printing, expandable features
Operating Temperature Range	0 ~ 40°C (32-104 °F)
Storage Temperature Range	-20 ~ 50°C (-4-122 °F)
Standard Accessories	Power adapter, QC software (downloadable from website or provided after-sales), calibration standard plate, calibration stand
Optional Accessories	Mini printer



Multiple Color Spaces

Accurately measure and express various density indicators, color difference formulas and color indices in multiple color spaces.



Customized single aperture

Support customized single aperture with optional diameters: Φ2mm, Φ4mm, Φ8mm.



Widely used in various fields

Widely applied in industries such as ink printing, film processing, textile dyeing, and plastic electronics.



Multi-functionality

Equipped with color management software, it can be connected to a computer for more function expansions.

SPECTROPHOTOMETER - PRIN

YD5050 Spectrodensitometer

The YD50 series of instruments are stable, and provide accurate density and chromaticity data. They are also highly functional. These instruments are equipped with a variety of measuring apertures and are widely used in industries such as ink printing factories, paper mills, traffic sign industries, and textile and garment dyeing. They are also extensively applied in scientific research institutions, quality inspection agencies, and laboratory settings.



Auxiliary Positioning Plate: Facilitates Sample Positioning for Measurement.



PRODUCT FUNCTIONS

The YD50 series densitometers are capable of accurately measuring and expressing various density indicators, color difference formulas, and color indices. They support the measurement of density values, density differences, dot areas, dot gains, overprinting, printing characteristics, printing contrasts, tone errors, and gray scales. These densitometers are practical tools for printing quality control and other inspections.

- ✓ Density value
- ✓ Density difference
- ✓ Dot area
- ✓ Dot gain
- ✓ Printing characteristic
- ✓ Tone error
- ✓ Gray scale
- ✓ Overprinting
- ✓ Yellowness
- ✓ Whiteness
- ✓ Opacity
- ✓ Metamerism

TING INDUSTRY SPECIFIC

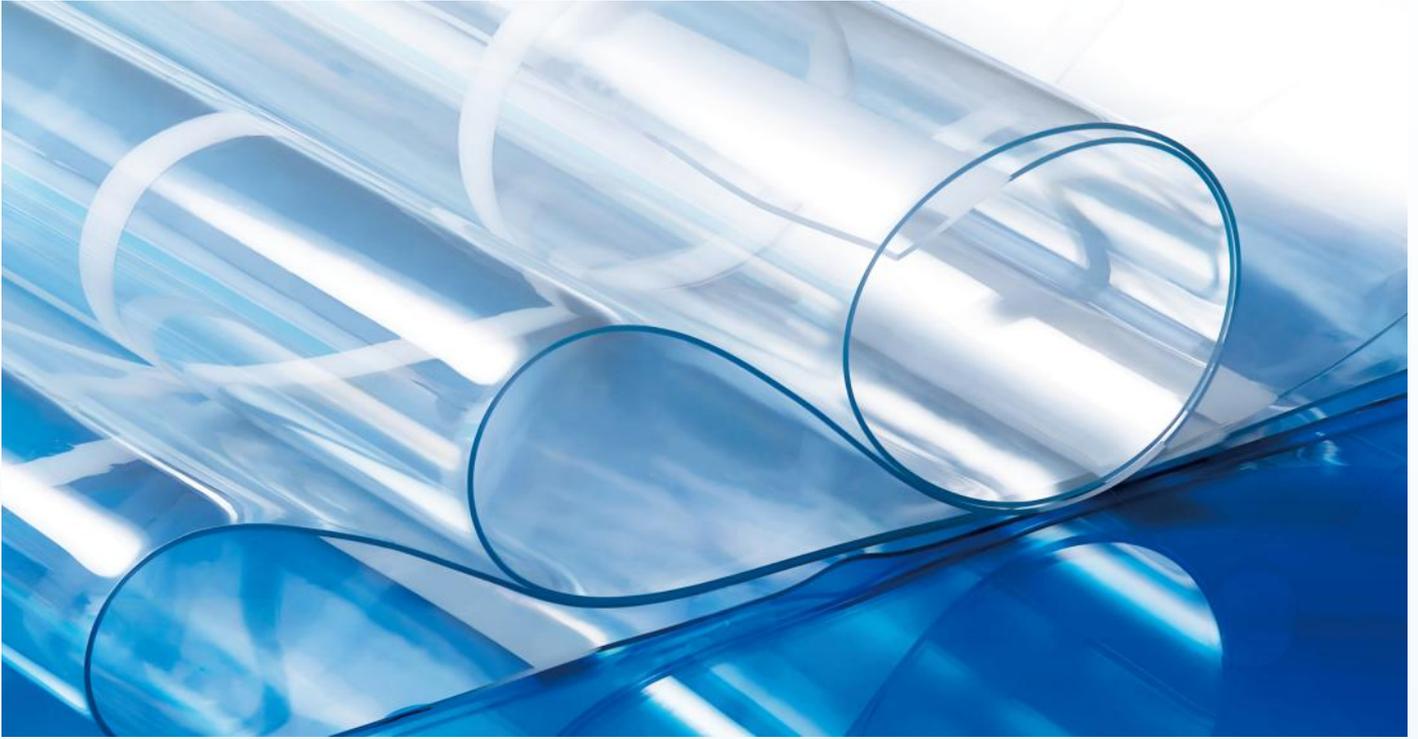
1. 45/0 geometrical optics structure, comply with CIE, the testing conditions of MO, M1, M2, M3 stipulated by ISO 13655 standard, it can accurately measure various printing density, overprint rate and other printing parameters;
2. Accurately measure reflectance spectrum, CMYK density and Lab value of the sample;
3. High-configuration electronic hardware: 3.5-inch TFT true-color screen, capacitive touch screen, concave grating, 256-pixel dual-array CMOS image sensor, etc.
4. Perfect combination of the beautiful appearance and the ergonomic structure design;
5. Optional apertures: $\Phi 2/4/8$ mm, adapt to more samples;
6. Large-capacity storage space, over 20,000 test data;
7. Combined LED light sources with long life and low power consumption, including UV light;
8. USB/Bluetooth dual communication mode is widely used;
9. Especially suitable for process control and quality control of printing plants;
10. PC software has powerful function extension.



SPECIFICATION PARAMETER

Model	YD5050	YD5010
Optical Geometry	45/0 (45 ring-shaped illumination, 0 degree viewing angle), ISO 5-4, CIE No.15	
Illuminant	Combined LED Light, UV Light	
Spectral Mode	Concave Grating	
Sensor	256 Image Element Double Array CMOS Image Sensor	
Wavelength Pitch	10 nm	
Semi-bandwidth	10 nm	
Measurement Conditions	Compliance with ISO 13655, measurement conditions; M0 (CIE Light Source A); M1 (CIE Light Source D50) M2 (Excluding UV light source); M3 (M2 + Polarized light filter)	
Density Standard	ISO Status T, E, A, I	
Density Index	Density value, density difference, dot area, dot enlargement, overprint, printing characteristics, printing contrast, tone error and gray scale, density scanning	Density value, density difference, dot area, dot enlargement, overprint, printing characteristics, printing contrast, tone error and gray scale
Density Index	Customized one aperture : $\Phi 2$ mm, $\Phi 4$ mm, $\Phi 8$ mm optional	
Color Space	CIE LAB, XYZ, Yxy, Lch, CIE LUV, HunterLAB	CIE LAB, XYZ, Yxy, LCh
Color Difference Formula	ΔE^*ab , ΔE^*uv , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , ΔE , Hunter	ΔE^*ab , ΔE^*00 , ΔE^*94
Other Colorimetric Data	WI(ASTM E313, CIE/ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), MI (Metamerism Index), Opacity	/
Observer	2°/10°	
Illuminant	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30)	D65, A, C, D50, D55, D75, F2 (CWF), F7, F11, F12
Measurement Time	About 1.5 s	
Repeatability	Density value: within 0.01 D Colorimetric value: within ΔE^*ab 0.03 (after instrument calibration, the average value of 30 measurements of the white plate at 5 - second intervals)	Density value: within 0.01 D Colorimetric value: within ΔE^*ab 0.04 (after instrument calibration, the average value of 30 measurements of the white plate at 5 - second intervals)
Inter-instrument Agreement	Within ΔE^*ab 0.18(Average for 14 BCRA Series II color tiles) Except M3	Within ΔE^*ab 0.20 (Average for 14 BCRA Series II color tiles) Except M3
Measurement Method	Single Measurement, Average Measurement (2 - 99)	
Interface	USB, Bluetooth	USB
Stored Data	20,000 pcs	10,000 pcs
Dimensions	L * W * H = 184 x 77x 105 mm	
Weight	Approximately 600 g	
Battery Capacity	Lithium battery, 3.7 V, 3200 mAh, 5,000 times within 8 hours	
Lighting Source	Service life of 5 years, more than 3 million measurements	
Display Screen	TFT true - color 3.5 inch, capacitive touchscreen	
Languages	Simplified Chinese, English, Traditional Chinese	
Operating Temperature Range	0 - 40°C, 0 - 85% RH (non - condensing), altitude: below 2,000 m	
Storage Temperature Range	-20 - 50°C, 0 - 85% RH (non - condensing)	
Standard Accessories	Power adapter, data cable, built - in lithium battery, instruction manual, quality control software (downloadable from official website), White and Black Calibration Board, Protective Cover, Polarization filter box, Locating Plate	
Optional Accessories	Mini printer	

SPECIALIZED FOR HAZE AND LIGHT TRANSMITTANCE MEASUREMENT



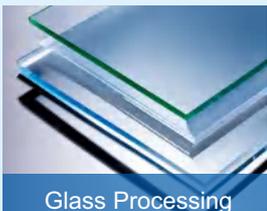
YH1610 Color haze meter

The YH1610 Color Haze Meter utilizes a precision concave grating and a 256-pixel CMOS detector to accurately capture the transmittance curve of transparent samples. It can precisely output various chromaticity data of the samples, enabling high-precision and reproducible measurements of transmittance, haze, and chromaticity data.



PRODUCT APPLICATION FIELDS

The YH1610 Color Haze Meter finds extensive applications in glass processing, plastic manufacturing, film production, display panel fabrication, packaging industry, and liquid pharmaceutical analysis.



Glass Processing



Plastic Manufacturing



Film Production



Liquid Pharmaceutical



Packaging Industry

Equipped with compensation ports for more accurate measurement data.

- Compliant with ASTM D1003 Non-compensated Method and ISO 13468 Compensated Method for total transmittance and haze testing, delivering more accurate test results.



- Open measurement area supporting both vertical and horizontal testing modes, flexibly adapting to various types of test samples and meeting diverse testing requirements.



- High-precision total transmittance and haze testing functions provide a scientific basis for product quality control, helping enterprises improve quality standards.
- Accurately outputs various chromaticity data of transparent samples, achieving high-precision and reproducible measurements of transmittance, haze, and chromaticity data with stable and reliable results.
- Intelligent operation interface simplifies the testing process, improves work efficiency, and reduces the technical threshold for operators.

- Independent light source detector and temperature sensor continuously monitor changes in the light source and environment to ensure the reliability of test data.
- Provides powerful haze, color and transmittance measurement analysis software, suitable for quality monitoring in various industries and tabular management of haze, transmittance and color data.

SPECIFICATION PARAMETER

Model	YH1810	YH1610	YH1210
Features	Spectroscopy, with compensation port		Photoelectric integration, with compensation port
Optical Geometry	Transmittance: 0/D (0-degree viewing angle, diffused illumination);		
Standards Compliant	ASTM D1003/1044, ISO 13468, ISO 14782, GB/T 2410, JJF 1303-2011, CIE 15.2, GB/T 3978, ASTM E308, JIS K7105, JIS K7361, JIS K 7136		ASTM D1003/1044, ISO 13468, ISO 14782, GB/T 2410, JJF 1303-2011, CIE 15.2, JIS K7105, JIS K7361, JIS K7136
Integrating Sphere Size	Φ154 mm		
Illuminant	400 ~ 700 nm Combined LED Lamp (Wavelength can be customized)		400 ~ 700 nm Combined LED Lamp
Spectral Mode	Concave-Grating		/
Sensor	256 Image Element Double Array CMOS Image Sensor		PD array detector, meeting CIE V(λ) 2 degree visual response
Measurement Wavelength Range	400 ~ 700 nm (Wavelength can be customized)		/
Wavelength Pitch	10 nm		/
Semi-bandwidth	10 nm		/
Measuring Range Of Transmittance	0 ~ 100%		
Measuring Aperture	Φ20 mm/Φ15 mm/Φ8 mm/Φ4 mm (select a single diameter)		
Sample Thickness	Less than 105 mm		
Color Space	CIE LAB, XYZ, Yxy, Lch, s-RGB, βxy		/
Color Difference Formula	ΔE*ab, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1), ΔE*00		/
Other Colorimetric Data	Haze(ASTM D1003/1044, ISO 13468), transmittance T(ISO), transmittance T(ASTM), clarity, WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), absorbance, cobalt platinum index, Gardner index	Haze(ASTM D1003/1044, ISO 13468), transmittance T(ISO), transmittance T(ASTM), WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), absorbance, cobalt platinum index, Gardner index	Haze (ASTM D1003/1044, ISO 13468), transmittance T(ISO), transmittance T (ASTM)
Observer	2°/10°		2°
Illuminant	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, TL83, TL84, TPL5, U30		D65, A, C
Displayed Data	Spectral Graph, Sample Chromaticity Value, Color Difference Value/graph, Chromaticity Graph, Color Simulation, Pass/fail Result		Pass / fail Result
Measurement Time	about 1.5 s		
Measurement Accuracy	0.01		
Repeatability	Φ20 mm aperture, 0.05 (after the instrument is warmed up and corrected, the standard deviation value of the standard haze sheet with a haze of about 30 is tested at an interval of 5 s)		
Inter-instrument Agreement	Φ20 mm aperture, less than 0.4 (after the instrument is warmed up and corrected, the standard deviation of the haze standard haze film and the reference value is tested at an interval of 5 s)		
Size	L * W * H = 487 x 260 x 298 mm		
Weight	About 8 kg		
Battery Performance	DC 24V, 3A Power Adapter		
Lamp Life	5 years, more than 3,000,000 times measurement		
Display	7-inch TFT Capacity Touch Screen Display		
Interface	USB, Printing Port, Bluetooth		USB, Printing Port
Data Storage	Standard: 5,000; Sample: 30,000	Standard: 5,000; Sample: 20,000	Standard: 1,000; Sample: 20,000
Language	Chinese, Traditional Chinese, English		
Operating Environment	0 ~ 40°C (32 ~ 104°F)		
Storage Environment	-20 ~ 50°C (-4 ~ 122°F)		
Standard Accessories	Power adapter, manual, quality management software (download from official website), data cable, 0% calibration box, measuring caliber		
Optional Accessories	Mini printer, test fixture, standard haze film, foot switch		

EASILY MEASURE TRANSLUCENT MATERIALS.

YH1100 Haze Meter

The YH1100 haze meter can easily perform ASTM D1003 non-compensation method, total light transmittance, and haze tests. Its open sample chamber allows both vertical and horizontal testing, making it suitable for more measured samples. It is widely used in glass processing, plastic processing, film, display screen processing, packaging industry, liquid medicine analysis, and other fields.



7 - inch Color
Touch Screen



Quick
Measurement



Spectral
Display



Support PC
software

PRODUCT FEATURES



- The open measurement area allows both vertical and horizontal testing, making it suitable for more types of samples.
- Equipped with a large-size touch screen for simple and convenient operation, and a USB data output device that can be connected to laboratory systems.
- Powerful haze and light transmittance measurement and analysis software is provided, which digitizes user management on PC, compares differences in haze and light transmittance, generates test report forms, and facilitates customers' customization and management work.

Standard Haze Plates (optional purchase)

They are used for the transfer of haze values and the calibration of haze measurements by various haze meters.





HAZE METER/TRANSMITTANCE METER

SPECIFICATION PARAMETER

Model	YH1200	YH1102	YH1100	YH1000
Features	Single aperture, with compensation port	Double apertures, without compensation port	Single aperture, without compensation port	
Optical Geometry	Transmission 0/D, Parallel light illumination, diffuse reflection reception			
Standards Compliant	ASTM D1003/1044, ISO 13468, ISO 14782, GB/T2410, JJF1303 - 2011, CIE 15.2, JIS K7105, JIS K7361, JIS K7136	ASTM D1003/1044, GB/T 2410, JJF 1303 - 2011, CIE 15.2, JIS K7105, JIS K7361, JIS K7136		
Integrating Sphere Size	Φ154 mm			
Illuminant	400 - 700 nm combined LED light source			
Spectral Mode	/			
Sensor	PD array detector, meeting CIE V(λ) 2 degree visual response			
Measurement Wavelength Range	/			
Wavelength Pitch	/			
Semi-bandwidth	/			
Measuring Range Of Transmittance	0~100 %			
Measuring Aperture	Φ20 mm/Φ15 mm/Φ8 mm/Φ4 mm (select a single aperture)	Φ20 mm/Φ8 mm double apertures	Φ20 mm/Φ15 mm/Φ8 mm/Φ4 mm (select a single aperture)	
Sample Thickness	Thickness less than 170 mm			
Color Space	/			
Color Difference Formula	/			
Other Colorimetric Data	Haze (ASTM D1003/1044, ISO13468), Transmittance T(ISO), Transmittance T(ASTM)	Haze (ASTM D1003/1044), Transmittance T(ASTM)		Haze (ASTM D1003/1044), Transmittance T(ASTM)
Observer	2°			
Illuminant	D65, A, C			
Displayed Data	Pass/fail Result			
Measurement Time	about 1.5 s			
Measurement Accuracy	0.01			
Repeatability	Φ20 mm caliber, less than 0.05	Φ20 mm caliber, less than 0.1		Φ20 mm caliber, less than 0.15
	(after the instrument is warmed up and corrected, the standard deviation value of the standard haze sheet with a haze of about 30 is tested at an interval of 5s)			
Inter-instrument Agreement	Φ 20 mm caliber, less than 0.4 (after the instrument is warmed up and corrected, the standard deviation of the haze standard haze film and the reference value is tested at an interval of 5 s)			
Size	L * W * H = 290 x 211 x 511 mm			
Weight	About 7.6 kg			
Battery Performance	DC 24V, 3A Power Adapter			
Lamp Life	5 years, more than 3,000,000 times measurement			
Display	7-inch TFT Capacity Touch Screen Display			
Interface	USB, Printing Port			
Data Storage	Standard: 1,000; Sample: 20,000			
Language	Chinese, Traditional Chinese, English			
Operating Environment	0 ~ 40°C (32 ~ 104°F)			
Storage Environment	-20 ~ 50°C (-4 ~ 122°F)			
Standard Accessories	Power adapter, manual, quality management software (download from official website), data cable, 0% calibration box, measuring caliber			
Optional Accessories	Mini printer, test fixture, standard haze film, foot switch			

0.5s

Measurement Time

The measurement time is only about 0.5 seconds, which greatly improves work efficiency and is suitable for fast-paced production and R&D environments.

0.1%

High Resolution

The resolution is as high as 0.10%, and the measurement accuracy is better than $\pm 1.5\%$ (for colorless and uniformly light-transmitting substances). It is tested with standard templates before leaving the factory, and the accuracy can even reach $\pm 1\%$, ensuring the reliability of measurement results.

4

Light Sources

Equipped with four light sources - UV, visible light, 940 nm IR, 1400 nm IR, and full-spectrum IR - along with SHGC and TSER measurement capabilities, this system enables diversified detection and ensures precise analysis of various transparent materials.

YT1020 Transmittance Meter

The transmittance meter YT1020 is specifically designed for quickly and accurately measuring the transmittance of transparent substances. It adopts four types of light sources and can measure visible light in the range of 380 - 760 nm, infrared with peak wavelengths of 940 nm and 1400 nm, and the full infrared band. Equipped with a highly sensitive and fast - responding silicon photodiode as a sensor, combined with professional algorithm calibration, it ensures the instrument's measurement speed, accuracy, stability, and consistency.



MEASUREMENT OF TRANSMITTANCE AND SHADING COEFFICIENT

The transmittance meter YT1020 is widely used in industries such as glass and film, and is used for measuring parameters such as the transmittance and shading coefficient of transparent substances.



APPLICATION FIELDS

PRODUCT APPLICATION

The transmittance meter YT1020 has a sample thickness limit of less than 47mm, which can easily meet the measurement needs of transparent substances with various thicknesses. It can accurately measure both thin sheets and thicker samples.



SPECIFICATION PARAMETER

Model	YT1020	YT1010
Characteristic	Four types of light sources used for measuring parameters such as transmittance and shading coefficient of transparent materials such as glass, film, etc	
Illumination Source	UV, visible light, infrared 940 nm, infrared 1400 nm, infrared full band, SHGC and TSER	UV, visible light, infrared 940 nm
Sensor	Silicon photodiode	
Measuring Wavelength Range	Visible light 380 nm - 760 nm; Infrared peak wavelength 940 nm, 1400 nm, infrared full band	Visible light 380 nm - 760 nm; Infrared peak wavelength 940 nm
Resolution	0.10%	
Measurement Time	About 0.5 s	
Measurement Accuracy	Better than $\pm 1.5\%$ (colorless and uniformly transparent substance), and better than $\pm 1\%$ when tested with standard samples at the factory	
Sample Thickness	Less than 47 mm	
Size	L * W * H = 203 x 120 x 29 mm	
Weight	515 g	
Power Supply Mode	5V DC power supply (Type-C)	
Lighting Source Lifespan	More than 3 million measurements in 5 years	
Display	TFT True Color 3.5 inch	
Interface	USB	
Language	Simplified Chinese / English	
Operating Temperature Range	0 ~ 40 °C, 0 ~ 85% RH (no condensation), altitude: below 2,000 m	
Storage Temperature Range	-20 ~ 50 °C, 0 ~ 85% RH (no condensation)	
Standard Attachments	Power adapter, data cable, manual	

STABLE PERFORMANCE HIGH PRECISION

NHG Series Intelligent Touch-Controlled Version HG Series Non-Touch- Controlled Version

NHG series intelligent touch screen gloss meter and HG series economic gloss meter is independently developed by 3nh, with independent intellectual property. Manufactured according to International standard ISO2813 and Chinese standard GB / T 9754, it is the world's first full large touch screen gloss meter. Tri-angle and 60 degree model meet most customers' requirement. With GQC6 PC software, gloss measurement is more convenient to use. Stable performance and high accuracy measurement makes it very popular all over the world.



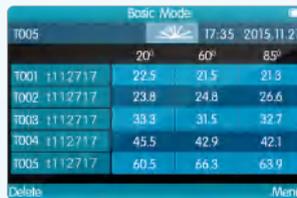
PRODUCT FEATURES

Large Screen: New - type full - touchscreen operation and large - screen display make it convenient to measure and read values.

Measurement Accuracy: Meets the requirements of JJG 696 Work Gloss Meters.

Automatic Shutdown: Automatic shutdown function saves power consumption.

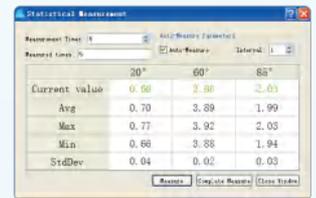
Portable and Exquisite: Combines aesthetic curved design with ergonomic structure.



Tri-angle for different use



It can display up to 5 groups of measurement data.



Can be connected to the computer software — GQC6

The NHG and HG series gloss meters all adopt a 3.5 - inch large - screen display. They can display up to 5 groups of measurement data, which is convenient for comparison. With a color screen, the viewing is clearer. Moreover, they can display information such as measurement time and battery level in real - time.



SPECIFICATION PARAMETER

Model	NHG268	NHG60	NHG60M
Optical Geometry	20°/60°/85°	60°	60°
Standards Compliant	ISO 2813、ASTM D 523、GB/T 9754		
Facula (mm)	20°: 10 x 10, 60°: 9 x 15, 85°: 5 x 36	9 x 15	2 x 4
Measuring Range	20°: 0 ~ 2,000 GU, 60°: 0 ~ 1,000 GU, 85°: 0 ~ 160 GU	0 ~ 1,000 GU	0~1,000 GU
Precision Value	0.1 GU		
Repeatability	0 ~ 100 GU: ±0.2 GU, 100 ~ 2,000 GU: ±0.2% GU	0 ~ 100 GU: ±0.2 GU, 100 ~ 1000 GU: ±0.2% GU	
Accuracy	Meet the JJG696 work gloss meter requirements		
Chromaticity Corresponds	Meets the requirements of JJG 696 Work Gloss Meters		
Measurement Time	1.5 s	0.5 s	0.5 s
Size	L*W*H=160 x 75 x 90 mm		
Weight	About 350 g		
Battery Performance	3200 mAh 3.7 V Li-ion Battery, 5,000 times within 8 hours		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB		
Data Storage	Basic: 1,000, statistics: 5,000, continuous: 5,000		
Software	GQC6 quality management software, quality inspection report printing, more function expansion		
Working Temp	0 ~ 40°C (32~104°F)		
Humidity	< 85% RH, No Condensation		
Standard Accessories	Charger, USB data cable, manual, GQC6 quality management software (official website download or after-sales service), calibration standard board		
Optional Accessories	Micro Printer		

Model	HG268	HG60	HG60S
Optical Geometry	20°/60°/85°	60°	60°
Standards Compliant	ISO 2813、GB/T 9754、ASTM D 523		
Characteristic	It can be used for gloss measurement in paint, ink, paint, paper printing, plastic electronics, furniture, ceramics, electroplating, hardware, marble and other industries. Provide basic measurement mode, Meet the basic gloss test. Large color display that displays multiple sets of test data simultaneously.		
Facula (mm)	20° : 10 x 10 60° : 9 x 15 85° : 5 x 36	9 x 15	9 x 15
Measuring Range	20°: 0 ~ 1,000 GU; 60°: 0 ~ 1,000 GU; 85°: 0 ~ 160 GU	0 ~ 300 GU	0 ~ 200 GU
Precision Value	0.1 GU	0.1 GU	1 GU
Repeatability	0 ~ 100 GU: 0.2 GU; 100 ~ 1,000 GU: 0.2% GU	0 ~ 100 GU: 0.2 GU; 100 ~ 300 GU: 0.5% GU	0 ~ 100 GU: 1GU; 100 ~ 200 GU: 1% GU
Accuracy	JJG696 class glossmeter working requirement	JJG697	JJG698 2nd Class
Chromaticity Corresponds	CIE C light source, CIE 1931 (2°) Luminosity corresponding		
Measurement Time	Per angle / 0.5 s	0.5 s	0.5 s
Size	L * W * H = 160 x 75 x 90 mm		
Weight	About 350 g		
Battery Performance	3,200 mAh 3.7 V Li-ion Battery, 10,000 times within 8 hours		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB		
Data Storage	Standard: 1,000	/	
Software	GQC6 quality management software, quality inspection report printing, more function expansion	Parameter adjustment software	
Humidity	< 85% RH, No Condensation		
Standard Accessories	Charger, USB data cable, manual, HG268 & HG60 for GQC6 quality management software/ HG60S for adjustment parameter software (official website download or after sale), calibration standard board		
Optional Accessories	Micro Printer		

GLOSS MEASUREMENT IS SO SIMPLE

20°/60°/85° Gloss Meters

YG series gloss meter is independently developed by 3nh with independent intellectual property, manufactured according to international standard ISO 2813 and China standard GB/T 9754. With auto-calibration and high-end QC software, it can meet the requirements of JJG696.



Product Model	YG268 Tri-angle Gloss Meter	YG60 60° Accurate Gloss Meter	YG60S 60° Economic Gloss Meter
Measurement Angle	20°/60°/85°	60°	
Measurement Spot	20°: 9 x 10 mm, 60°: 9 x 15 mm, 85°: 5 x 38 mm	60°: 9 x 15 mm	
Measurement Range	20°: 0 - 2000 GU, 60°: 0 - 1000 GU, 85°: 0 - 160 GU	60°: 0 - 1000 GU	60°: 0 - 200 GU
Resolution	0.1 GU	1 GU	
Measurement Time	0.5 seconds per angle	0.5 seconds	
Repeatability Precision	0 - 100 GU: ±0.2 GU; 100 - 2,000 GU: ±0.2% GU	0 - 100 GU: ±0.2 GU; 100 - 1,000 GU: ±0.2 GU%	0 - 100 GU: ±0.5 GU; 100 - 200 GU: ±0.5 GU%
Accuracy	Meets the requirements of JJG696 working gloss meter		
Auto Power - Off Time	30 - 120 seconds optional	30 seconds	
Calibration	Automatic self - check and calibration on startup/Manual calibration		Manual calibration
Languages	Simplified Chinese, English, Traditional Chinese		
Data Storage	35,000 entries (15,000 entries in basic and continuous modes, 10,000 entries in quality control mode, 10,000 entries in statistical mode)	/	
Display Screen	2.3 - inch black - and - white display		
Dimensions	L * W * H = 160 x 52 x 84 mm		
Weight	Approximately 300 g (including calibration box and battery)		
Power Supply	1 AA battery (alkaline or nickel - hydrogen rechargeable), can measure over 10,000 times; or use USB port		
Interfaces	USB	USB for power supply only	
PC Software	GQC6 QC software for quality report and more extended functions		/
Measurement Modes	Basic mode, statistical mode, continuous mode, quality control mode		Basic mode
Operating Temperature Range	0 ~ 40°C (32 - 104°F)		
Storage Temperature Range	-20 ~ 50°C (-4 - 122°F)		
Standard Accessories	USB data cable, instruction manual, GQC quality management software (downloadable from the official website or provided after - sales), calibration plate		Simple instruction manual, calibration plate
Optional Accessories	Mini printer, Bluetooth adapter		

PROFESSIONAL MEASUREMENT OF PAPER AND FILM

75°/45° Gloss Meter

The YG47 gloss meter is a high-precision portable gloss meter developed by 3nh. The instrument has two measurement angles, 45° and 75°, and the gloss at different angles can be measured simultaneously. The YG47 gloss meter is designed for industries such as ceramics, films, paper, and plastics, and is used for the measurement of specular gloss.



Product Model	YG47	YG75	YG45
Measurement Angle	45°/75°	75°	45°
Measurement Spot	45°: 10 x 13, 75°: 4 x 6	75°: 4 x 6	45°: 10 x 13
Measurement Range	45°: 0 ~ 800 GU 75°: 0 ~ 150 GU	75°: 0 ~ 150 GU	45°: 0 ~ 800 GU
Measurement Time	0.5 seconds per angle	0.5 seconds	
Repeatability Precision	0 ~ 100 GU: 0.1 GU; ±0.2 GU ; 100 ~ 800 GU: 1 GU; ±0.2% GU;	0 ~ 100 GU: 0.1 GU; ±0.5 GU ; 100 ~ 800 GU: 1 GU; ±0.5% GU ;	0 ~ 100 GU: 0.1 GU; ±0.2 GU ; 100 ~ 150 GU: 1 GU; ±0.2% GU ;
Accuracy	Meets the requirements of JJG696 working gloss meter		
Auto Power - Off Time	30 - 120 seconds optional		
Calibration	Automatic calibration/Manual calibration		
Languages	Simplified Chinese, English, Traditional Chinese		
Data Storage	3,5000 (Basic mode & Statistic mode : 15,000; Continuous mode: 10,000; QC mode: 10,000)		
Display Screen	2.3 inch black and white display		
Dimensions	L * W * H =160 x 52 x84 mm		
Weight	Approximately 300 g (including calibration box and battery)		
Power Supply	1 AA battery (alkaline battery or nickel - metal hydride rechargeable battery), can be used for more than 10,000 measurements.		
Interfaces	USB		
PC Software	GQC6 QC software for quality report and more extended functions		
Measurement Modes	Basic mode, statistical mode, continuous mode, quality management mode		
Operating Temperature Range	0 ~ 40°C (32 - 104°F)		
Storage Temperature Range	-20 ~ 50°C (-4 - 122°F)		
Humidity Range	< 85% RH, without condensation		
Standard Accessories	USB data cable, instruction manual, GQC quality management software (downloaded from the official website or provided after sales), calibration board		
Optional Accessories	Mini printer, Bluetooth adapter		

Color Light Box P60(60)

A Color Light Box reproduces common illuminants (e.g., D65, TL84, A) to create a stable viewing environment for laboratories. It serves textiles, plastics, coatings & inks, printing, chemicals, ceramics, leather & footwear, hardware, food and cosmetics industries, enabling visual color-fastness checks, color matching/proofing, shade assessment and fluorescence detection.



Parameter		Dimensions	
Configuration	Six light sources: F, D65, TL84, UV, CWF, TL83	External Dimensions	L*W*H=712 x 535 x 545 mm
Weight	27.35 Kg	Inner Dimensions	L*W*H=680 x 508 x 360 mm
Optional Accessories	45° standard viewing stand		

Light Source Explanation			
Name	Color Temperature	Power / Qty	Specification
F - Household and Hotel Lighting, Color comparison Reference Light Source	2700K	40 W * 4	Incandescent Mac color Lighting 40W 230V
D65 - International Standard Artificial Daylight	6500 K	18 W * 2	Fluorescent Natural Daylight PHILIPS TL-D 18W/965
TL84 - European, Japanese, and Chinese Store Light Source	4000 K	18 W * 2	Fluorescent PHILIPS TL-D 18W/840
UV - Ultraviolet Light Source	365 nm	18 W * 1	Fluorescent PHILIPS 18W / BLB BLACK LIGHT
CWF - American Cool White Store Light Source	4150 K	18 W * 2	Fluorescent PHILIPS TL-D 18W/33 COOL WHITE
TL83 - European Standard Warm White Store Light Source	3000 K	18 W * 2	Fluorescent PHILIPS TL-D 18W/830 WARM WHITE



Classic 1998 Series

- Sturdy and durable, low-energy consumption, high luminous efficiency
- T60(4): Equipped with D65, TL84, UV, and F light sources
- T60(5): Equipped with D65, TL84, UV, F, and CWF light sources
- P60(6): Equipped with D65, TL84, UV, F, CWF, and TL83 light sources



Ingenious Series

- Brand-name lamp tubes, seamless connection, LED screen display
- D60(4): Equipped with D65, TL84, UV, and F light sources
- D60(5): Equipped with D65, TL84, UV, F, and CWF light sources
- D60(6): Equipped with D65, TL84, UV, F, CWF, and TL83 light sources
- D60(7): Equipped with D65, TL84, UV, F, CWF, A, and TL83 light sources

More Color Light Box Models — Customizable



PRODUCT FEATURES

- It uses internationally renowned brand lamp tubes and high-quality driving power supplies. It is durable, generates no heat, has low light decay, and high luminous efficiency.
- It complies with international standards, requires no pre-heating, does not flicker, allows one-key light source switching, has an intelligent temperature control system, and features a metamerism function.
- It ensures fast and reliable color evaluation.

Color Light Table

Special-purpose color-matching table for printing & textiles

- **Light Source:** ISO 3664 compliant
- **Color Temperature Types:** D50 (5000 K) or D65 (6500 K)
- **Lamp Tube Series:** Dedicated for Graphica imported printing presses
- **Color Rendering Index:** CRI = 98, high-CRI
- **Number of Lamp Tubes:** 36W × 4 (pieces) - with a light source meter and timer

- **Material:** Made of all-metal, with solid and substantial materials
- **Workbench Cabinet:** Integral sheet metal structure, thick sheet metal, sturdy and stable
- **Operating Tabletop:** Inclined design, conforming to visual observation habits
- **Suspended Light Source:** Made of aluminum alloy profiles, streamlined design, beautiful and generous. Imported reflective panels and uniform light covers ensure even illumination

- **Size:** Large folio size, convenient to operate



CC120-A

Additional Color Light Tables — Customizable



CC120-B



CC120-C



CC120-D



CC120-E



CC120-F



CC120-G



CC120-I



CC120-Q



CC120-H



CC120-X



CC120-S



CC120-W

STANDARD LIGHT SOURCE

Provides the following illuminants :

D65, D50, D75, TL84, CWF, UV, U30, TL83, U35, F, A, INCA, HOR



3nh Lighting D65 lamp

Model: Model: F20T12/65 6500K 20W

Size: 60cm

Brand: 3nh



PHILIPS D65 lamp

Model: TL-D 18W/965

Size: 60cm

Brand: PHILIPS



GRETAGMACBETH D65 lamp

Model: F20T12/65 6500K

Size: 60cm

Brand: Macbeth



VeriVide D65 lamp

Model: F20T12/D65

Size: 60cm

Brand: VeriVide



Ecolux U35 lamp

Model: F17T8 SPX35 ECO

Size: 60cm

Brand: GE



SYLVANIA D65 lamp

Model: F20T12/65 6500K 20W

Size: 60cm

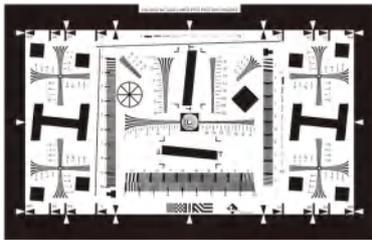
Brand: SYLVANIA

Name	Color temperature	3nh	PHILIPS	VeriVide	GE	SYLVANIA	GretagMacbeth
D75 North Sky Daylight	7500 K	✓					✓
D65 Artificial Daylight	6500 K	✓	✓	✓		✓	✓
D50 Professional light source for printing	5000 K	✓	✓				✓
CWF Cool White Fluorescent	4150 K		✓		✓	✓	
TL84 Commercial lighting applications outside North America	4000 K	✓		✓			
HOR Horizontal fluorescent lamp	3200 K	✓				✓	
TL83 Warm White Fluorescent	3000 K		✓			✓	
A American window spotlights, colorimetric reference lights	2856 K	✓			✓	✓	
F Family hotel lights, colorimetric reference light source	2700 K	✓					
UV Ultra-Violet	365 nm	✓	✓			✓	

SINEIMAGE

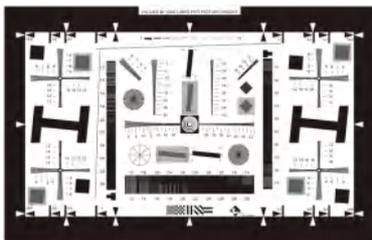
PRODUCT CATALOGUE

OPTICAL IMAGE TEST SOLUTION



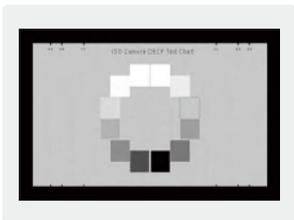
ISO 12233 Resolution Test Chart

Resolution Test Chart	
(Product No.)	(Active Area)
NQ - 10 - 100A (1X)	200 x 356 mm (7.87 x 14 in)
NQ - 10 - 200A (2X)	400 x 712 mm (15.75 x 28 in)
NQ - 10 - 400A (4X)	800 x 1424 mm (31.5 x 56 in)
NQ - 10 - 800A (8X)	1600 x 2848 mm (63 x 112 in)
NQ - 10 - 50A (0.5X)	100 x 178 mm (3.94 x 7 in)
NQ - 10 - 10A (0.1X)	20 x 35.6 mm (0.79 x 1.4 in)

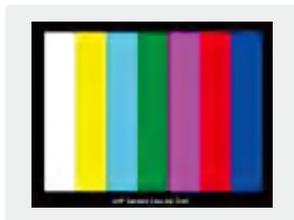


ISO 12233 Enhanced Resolution Test Chart

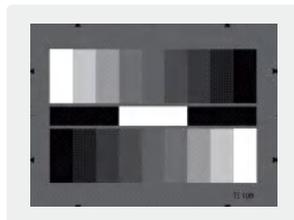
Enhanced Resolution Test Chart	
(Product No.)	(Active Area)
NE - 10 - 100A (1X)	200 x 356 mm (7.87 x 14 in)
NE - 10 - 200A (2X)	400 x 712 mm (15.75 x 28 in)
NE - 10 - 400A (4X)	800 x 1424 mm (31.5 x 56 in)
NE - 10 - 800A (8X)	1600 x 2848 mm (63 x 112 in)
NE - 10 - 50A (0.5X)	100 x 178 mm (3.94 x 7 in)



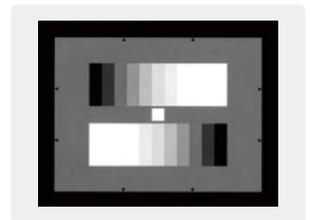
ISO 14524 Dynamic Range Test Chart



DNP Color-bar Chart



DNP 9 Steps Grayscale Chart



DNP 11 Steps Grayscale Chart



X-Rite 24 Color Chart



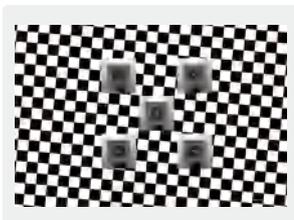
X-Rite ColorChecker Sg140



ESSER Skin Color Chart



DNP Skin Color Chart



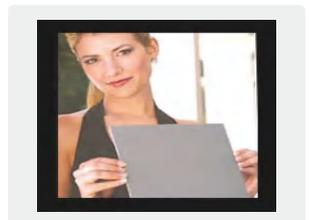
SFR Chart



3D Calibration Test Chart



Kodak Q-14

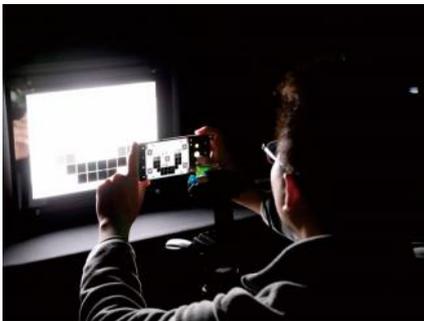
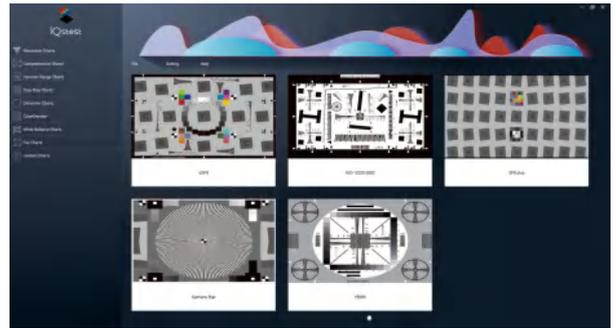


Gray Chart

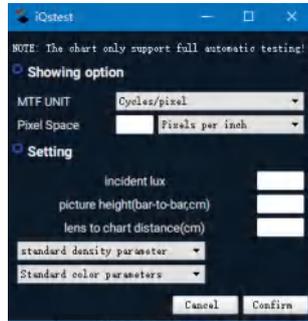
IMAGE TESTING

IMAGE QUALITY SOFTWARE

iQstest is image-quality analysis software developed by SINE IMAGE, a 3nh company. With years of expertise in image inspection, it supports Resolution, Dynamic-Range, Gray-Step, Distortion, ColorChecker, White-Balance, FOV and custom charts.



1. Shoot the test chart



2. Import images to iQstest



3. Automatic data analysis

IMAGE QUALITY EQUIPMENT



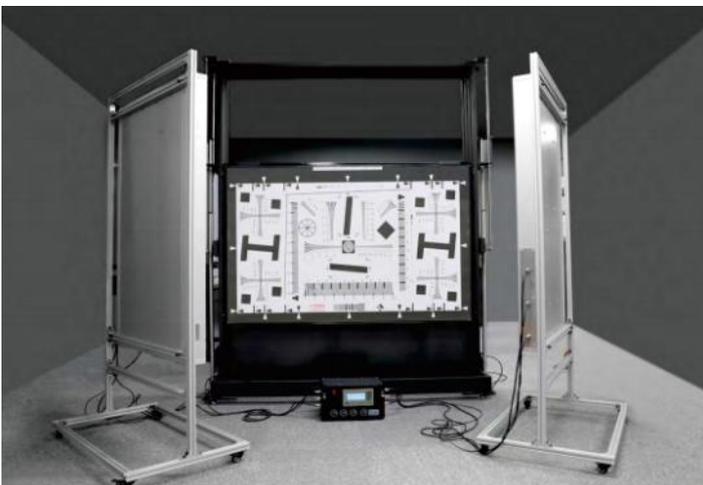
1. T259000 High-Illuminance / Color-Temperature-Adjustable Transmissive Light Box



2. T90-7 Image Light Booth



3. VC-118-S Camera Test Light-Source Box



4. T120-4 Photo Fill-Light Box & T1422-4E Electric Multi-Chart Hanger

T120-4 Photo Fill-Light Box provides a standard, uniform lighting environment for image-quality testing. Used together with transmissive test charts, it delivers repeatable results that can be analyzed in iQstest image-processing software. This system is ideal for evaluating lenses and imaging modules in video cameras, mobile phones, security cameras and consumer cameras.

COLOR MANAGEMENT

Color Management Equipment and Solutions

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